20 Cents a Copy

MAY, 1914

$2.00 a Year

The Public Health Journal

The Official Organ of the Canadian Public Health Association.

Vol V

No. 5.

"Spreads like Butter"

Ingersoll
Cream Cheese

The purest, richest, creamiest cheese money can buy. Makes the most delicious sandwiches.

Ask your Grocer

15c & 25c Package 06

The INGERSOLL PACKING Co Ltd. Ingersoll, Ontario

Sold by all Grocers. 15c. and 25c. a package.

MANUFACTURED BY
THE INGERSOLL PACKING CO.
LIMITED
INGERSOLL, ONTARIO

One of the surest ways of keeping in good health is to eat Pure Food . .

The Meat Products of

The Wm. Davies Co., Ltd.

TORONTO

are prepared under Government inspection, which insures that the meat is from animals free of disease, and that the product has been prepared according to Governmental regulations.

Davies' products are sold by most Provision Merchants, and through the Company's own stores in Ontario and Quebec.

?

WATER PURIFICATION

Why don't you call or write us for particulars of
Pressure Filtration

Do so, you will find it time well spent for municipal or industrial purposes

Bell Filtration Company of Canada, Limited
305 Kent Building, Toronto

MODIFIED MILK POWDER (C.M.P.)
SWEET WHEY POWDER (C.M.P.)

IT is only recently that physicians have generally realized the importance of a ***Split Proteid*** modification of milk for infant feeding, whereby the casein content is lowered and the milk-albumen content is raised. This cannot be accomplished by the customary home modification, but is the basis of our preparations as appears from the following analysis:

Modified Milk Powder (C.M.P.)		*Sweet Whey Powder (C.M.P.)*	
Fat	11.55%	Casein	.35%
Casein	9.50	Lact. Albumen	12.38
Lact. Albumen	9.60	Milk Sugar	76.55
Milk Sugar	60.10	Ash	9.10
Ash	7.75	Moisture	1.62
Moisture	1.50		
	100.00%		100.00%

If a variant from the above proportions is needed by a physician in a given case, it can readily be obtained by a combination of the two in varying proportions. Free samples and pamphlets on the same gladly sent to any physician.

CANADIAN MILK PRODUCTS, LIMITED

MAIL BUILDING - - - - TORONTO, ONT.

If you have a baby you owe it to the child to write to us.

Our scientifically prepared foods are saving many lives.

CONGRESS, 1914

Fort William and Port Arthur

Canadian Public Health Association

PATRON

FIELD MARSHAL, HIS ROYAL HIGHNESS THE GOVERNOR GENERAL

VICE-PATRON

RT. HON. R. L. BORDEN, P.C., M.P., G.C.V.O. PREMIER.

PAST HONORARY PRESIDENTS AND HONORARY VICE-PRESIDENTS

Sir EdmundOsler
Sir James A. Grant.
Hon A. L. Sifton.
Hon. J. M. Methuen.
Rt. Hon. Sir Wilfred Laurier
Hon. W. Scott.
Colonel Hon. S. Hughes.
Hon. Martin Burrell.
J. C. Eaton, Esq.
Hon. W. J. Hanna.
Hon. Clifford Sifton.
Hon. Sir James Whitney.
Hon. G. H. Murray.
E. B. Wood, Esq.
Hon. Sir R. McBride.
Hon. Sir R. P. Roblin.
Hon. H. K. Flemming.
Hon. Sir Lomer Gouin
Hon. J. D. Hazen.
Sir William Van Horne
Hon. George Langley.

HONORARY PRESIDENT

ADAM H. WRIGHT, M.D., TORONTO
Chairman of the Provincial Board of Health, Ontario.

PRESIDENT

MAURICE M. SEYMOUR, M.D., REGINA

VICE-PRESIDENTS

J. D. PAGE, M.D., QUEBEC. T. AIRD MURRAY, C.E., REGINA. DUNCAN M. ANDERSON, M.D., TORONTO.
PROFESSOR J. A. AMYOT, M.D., University of Toronto. T. H. WHITELAW, M.D., EDMONTON.
P. B. TUSTIN, WINNIPEG.

GENERAL SECRETARY
MAJOR LORNE DRUM, M.D., D.P.H., OTTAWA

TREASURER
GEORGE D. PORTER, M.B., TORONTO

EXECUTIVE COUNCIL

PAST PRESIDENTS:
T. A. Starkey, M.D., D.P.H., Montreal.
Charles A. Hodgetts, M.D., D.P.H. Ottawa.
J. W. S. McCullough, M.D., Toronto

P. H. Bryce, M.A., M.D., Ottawa.
F. Montizambert, M.D., f. O., Ottawa
E. P. Lachapelle, M.D., Montreal.
Col. G. C. Jones, G.G.H.S., D.G.M.S., Ottawa.
J. G. Rutherford, H.A.R.V.S., C.M.G., Calgary.
C. J. O. Hastings, M.D., Toronto
H. W. Hill, M.D., London
R. E. Wodehouse, M.D., Fort William

J. Goselin, M.D., Quebec
Albert Chevelier, Esq., Montreal
Prof. Fraser Gurd, M.D., Montreal
Murray McLaren, M.D., St. John
Rev. Mr. White, D.D., St. John
F. W. Wainwright, M.D., Fredericton
John Stewart, M.D., Halifax
S. L. Walker, M.D., Truro
F. L. Ford, M.D., Milton
H. D. Johnson, M.D., Charlottetown
S. R. Jenkins, M.D. "
I. J. Yeo, M.D. "
G. D. Mackie, M.I.M.C.E. Swift Current
W. A. Thomson, M.D., Regina
D. A. Stewart, M.D., Winnipeg

F. F. Westbrook, M.D. Vancouver
F. T. Underhill, M.D., Vancouver
Dr. Arthur; Nelson, B.C.
W. C. Laidlaw, M.D., Edmonton
D. G. Revell, M.D., Edmonton
Harold Orr, M.D., Medicine Hat
M. R. Bow, M.D., Regina
Mrs. A. M. Huestis, Toronto
Mrs J. C. McLimont, Quebec
W. E. Struthers, M.D., Toronto
Miss Helen R. Y. Reid, Montreal
Major D. B. Bentley, M.D., London
Major F. L. Vaux, M.D., Winnipeg
W. W. Andrews, L.L.D., Regina
D. I. Dunn, M.D., Edmonton

EXECUTIVE COMMITTEE

THE PRESIDENT, GENERAL SECRETARY, and TREASURER, ex officio, and
DR. C. J. O. HASTINGS Medical Officer of Health, Toronto, DR. C. A. HODGETTS, Ottawa,
DR. DUNCAN M. ANDERSON, Toronto.

Active membership, $3.00 per annum, is obtainable by Canadians directly interested in matters bearing on public health, such as physicians, engineers, architects, etc., and permits official co-operation in the work of the Association. For others, *subscription to The Public Health Journal at $2.00 per annum includes associate membership* see terms, etc., page v.

Make Cheques, etc., payable to the "Treasurer, Canadian Public Health Association."

THE ORIGINAL
AND LEADING BRAND
SINCE 1857

BORDEN'S
Eagle Brand

Condensed Milk

For three generations has been the World's Leading Brand for Infant Feeding.

Always uniform in composition; easily prepared; economical.

It provides a safe, wholesome substitute when Nature's supply fails.

Send for Booklet and Feeding Chart

Borden Milk Company, Limited

396 St. Paul St. - - - MONTREAL

Proven Purest and Best ——

E. D. Smith's & Son, Ltd.

Jams, Jellies and Marmalade

¶ The Trademark that stands for Quality.

¶ See Government Analysis, (Bulletin No. 244).

—*Also Manufacturers of*—

Cordials, Catsup and Canned Goods

Winona, Ont.

E
D S

For Light and Nourishing Food it's Always Safe to Recommend

CHRISTIE BISCUITS

the purest of all pure foods—biscuits just as near perfection as first-class ingredients and scientific baking, by twentieth century methods, can make biscuits.

Christie Biscuits mean the best ingredients money can buy—all first-class table quality—mixed and baked in the Christie scientific way and packed in dust and damp proof tins and packages to assure lasting goodness. You may heartily recommend Christie Biscuits, if you want to recommend the best biscuits on the market—not because we say so, but because the particular housewives of Canada have proved them so.

N.B.—Our Zephyr Cream Sodas crushed in Cream or Fresh Sweet Milk certainly do make a light and nourishing breakfast.

CHRISTIE, BROWN & CO., Limited

TORONTO, ONTARIO

The Public Health Journal

The Official Organ of the Canadian Public Health Association

Copyright

MAY, 1914, INDEX

Registered

[Reproduction of contents may be made, accompanied by acknowledgement to *The Public Health Journal.*]

Human inertia, curiously enough, sometimes hinders us from the benefit of even so small an effort as the opening of a dictionary when we want to know the meaning of a word that is new to us. The same curious lack of activity often hinders us from reaching out for a postal card on which to make an inquiry about something we have seen advertised. Why not learn the art of acting on good impulses? Do any of the advertisements in this issue quicken an inquiry?

THE PUBLIC HEALTH JOURNAL, is published on THE 15TH OF EACH MONTH by the York Publishing Company, Limited, Lumsden Building, Toronto. $2.00 per year in Greater Britain and United States; Foreign, $3.00.

CHANGE OF ADDRESS: In all changes of address it is necessary that the old as well as the new address be given.

REPRINTS will be furnished at the following prices provided a request accompanies the MSS:—

Two Page	100 copies, $2.75;	each extra 100 copies 15 cents
Four Page	100 copies, $4.00;	each extra 100 copies 20 cents
Six Page	100 copies, $5.75;	each extra 100 copies 30 cents
Eight Page	100 copies, $7.00;	each extra 100 copies 35 cents

Covers cost $2.50 for first 100 and $1.00 for each extra 100

ADVERTISING RATES will be furnished on application.

ADDRESS in every case, "THE PUBLIC HEALTH JOURNAL" Lumsden Building Toronto, Canada; adding name of department it is desired to reach as, "Editorial" or "Business."

ENTERED according to act of Parliament of Canada, in the year one thousand nine hundred and fourteen at the Department of Agriculture. All rights reserved.

The Best Antiseptic for Purposes of Personal Hygiene

LISTERINE

Being efficiently antiseptic, non-poisonous, and of agreeable odor and taste, Listerine has justly acquired much popularity as a mouth-wash, for daily use in the care and preservation of the teeth.

As an antiseptic wash or dressing for superficial wounds, cuts, bruises, or abrasions, it may be applied in its full strength or diluted with one to three parts water; it also forms a useful application in simple disorders of the skin.

In all cases of fever, where the patient suffers so greatly from the parched condition of the mouth, nothing seems to afford so much relief as a mouth-wash made by adding a teaspoonful of Listerine to a glass of water, which may be used ad libitum.

As a gargle, spray or douche, Listerine solution, of suitable strength, is very valuable in sore throat and in catarrhal conditions of the mucous surfaces; indeed, the varied purposes for which Listerine may be successfully used stamps it as an invaluable article for the family medicine cabinet.

Special pamphlets on dental and general hygiene may be had upon request.

LAMBERT PHARMACAL COMPANY

LOCUST and TWENTY-FIRST STREETS - - ST. LOUIS, MO.

KRESO

An Ideal Disinfectant, Germicide, Deodorant
Antiseptic and Parasiticide
For Hospitals, Veterinary and Domestic Use

Write for Descriptive Booklet

Parke, Davis & Co.

Manufacturing Chemists and Biologists,

WALKERVILLE, ONTARIO

Eastern Depot, 378 St. Paul Street, MONTREAL, QUE.

Duncan's Aldoform Tablets

These Tablets are composed of Formaldehyde in combination with sugar, etc., and suitably flavored, so that the pungent taste of the Formaldehyde is completely covered.

Aldoform Tablets (Duncan) are intended to be slowly dissolved in the mouth, thus allowing the valuable antiseptic powers of the Formaldehyde to have full therapeutical effect.

These Tablets are a powerful remedy for septic throats and any foul conditions of the mouth, such as occur in cases of fever, etc. They are extremely useful for juveniles and others to whom gargling is a difficulty. They quickly control bacterial growths and form a perfect antiferment for oral purposes.

Aldoform Tablets are absolutely devoid of all irritating properties and being non-toxic can be frequently used without producing ill effects.

Each Tablet contains 1 per cent. of Formaldehyde.

Duncan, Flockhart & Co.

EDINBURGH and LONDON

MAY BE ORDERED THROUGH ALL RETAIL DRUGGISTS

SAMPLES ON REQUEST

R. L. GIBSON,

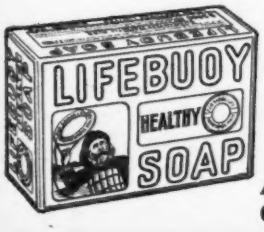
88 Wellington Street West, Toronto, Ontario

5c. a Cake LIFEBUOY SOAP

In Treating the Skin

Lifebuoy is the perfect soap to use in connection with the treatment of all skin ailments.

The cocoanut and red palm oils are soothing and comforting to an irritated or sensitive skin.



All Grocers

But the greatest value of Lifebuoy lies in its purifying carbolic solution. This prevents the affection of adjacent parts and forms a constant safeguard.

LIFEBUOY HEALTH SOAP

LABORATORY SUPPLIES

INGRAM & BELL, LIMITED

We are in a position to fully equip any size laboratory, being representatives of some of the best known firms in these lines, as follows :

Microscopes—Bausch & Lomb, Zeiss, Spencer.

Autoclaves and Incubators—Bramhall Deane Co. of N.Y.

C. P. Chemicals—Baker & Adamson, Kahlbaums, Mercks.

Centrifuges—International Instrument Co., Cambridge, Mass.
—Shelton Electric Co.

Laboratory Glassware—Direct Importers of Jena Glass and Resistance Chemical Glassware.

Haemocytometers—Thoma, Türck.

Grubler's Stains, Haemoglobinometers, etc., etc.

We solicit your orders. Quotations gladly given.

Ingram & Bell, Limited

New Address : 256 McCaul St. (1 door south of College) Toronto

NEW BOOKS

BLOOD PRESSURE, from the Clinical Standpoint. By Francis A. Faught, M.D., formerly Director of the Laboratory of Clinical Medicine, Medico-Chirurgical College of Philadelphia. Octavo of 281 pages, illustrated. Cloth, $3.00.

OPERATING ROOM AND THE PATIENT. A Manual of Pre and Post-Operative Treatment. By Russell S. Fowler, M.D., Chief Surgeon, First Division, German Hospital, Brooklyn. Octavo volume of 611 pages, illustrated. Cloth, $3.50.

PSYCHANALYSIS. Its Theories and Practical Application. By A. A. Brill, Ph.B., M.D., Chief Assistant in Psychiatry and Neurology at Columbia University, Medical School; formerly Assistant Physician to Central Islip State Hospital, and to the Clinic of Psychiatry, Zurich. Octavo volume of 337 pages. Cloth, $3.00.

APPLIED BACTERIOLOGY FOR NURSES. By Charles F. Bolduan, M.D., Assistant to the General Medical Officer, and Marie Grund, M.D., Bacteriologist, Research Laboratory, Department of Health, New York City. 12 mo. volume of 160 pages, illustrated. Cloth, $1.25.

ACUTE ABDOMINAL DISEASES. By Joseph E. Adams, M.B., M.D., London, F.R.C.S., England. Senior Assistant Surgeon, East London Hospital for Children, Hunterian Professor, Royal College of Surgeons of England; and Maurice A. Cassidy, M.A., M.D., B.C. Cantab, F.R.C.P., London. Physician with charge of Out Patients, St. Thomas' Hospital. Containing 571 pages, illustrated. Cloth, $4.00.

The J. F. HARTZ COMPANY
LIMITED

406-408 Yonge St., Toronto

Merck's Archives

presents each month a review of progress in the treatment of disease and modern discoveries in drug therapy.

It is eminently a journal for the busy general practitioner.

A pleasing variety is afforded by a department of General Interest and of Miscellany, Editor's Notes, Book Notes, etc.

Sample copies furnished to physicians on request

Subscription price, $1.00 a year

PUBLISHED BY

MERCK & CO.

45 Park Place - New York

The Peculiar Advantage of the

Marvel "Whirling Spray" Syringe

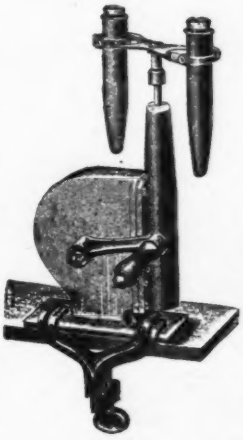
is that **The Marvel,** by its centrifugal action **dilates and flushes** the vaginal passage with a volume of whirling fluid, which smooths out the folds and permits the injection to come in contact with its entire surface.

Prominent physicians and gynecologists everywhere recommend the MARVEL Syringe in cases of Leucorrhea, Vaginitis, and other vaginal diseases. It always gives satisfaction.

The Marvel Company was awarded the Gold Medal, Diploma and Certificate of Approbation by the Societe D'Hygiene de France, at Paris, October 9, 1902.

All Druggists and Dealers in Surgical Instruments sell it. For Literature address

MARVEL COMPANY, 44 E. 23rd St., New York



Centrifuges and other Analysis Equipments

¶ We carry at our establishments in Toronto, Winnipeg and Vancouver complete stocks of CENTRIFUGES, operated by hand, by electricity, and by water power.

¶ We have supplied a number of Municipalities with water power CENTRIFUGES for use in their medical health department. This is a very satisfactory apparatus where a medium water pressure is obtainable and can be supplied complete at $12.00 each.

THE STEVENS COMPANIES

396 Notre Dame Ave. WINNIPEG | 145 Wellington St. W. TORONTO | 748 Richards St. VANCOUVER

Hospital for Nervous Diseases

TORONTO

PRIVATE MEDICAL HOSPITAL, devoted exclusively to the treatment of Organic and Functional Diseases of the Nervous System, especially Neurasthenia in its various forms.

NO INSANE NOR DRUG HABIT CASES RECEIVED FOR TREATMENT

For further particulars apply to CAMPBELL MEYERS, M.D., 72 Heath Street, Toronto, Canada.

MUSKOKA COTTAGE SANATORIUM

GRAVENHURST, ONTARIO, CANADA

For booklet apply to W. B. Kendall, M.D., C.M., L.R.C.S., L.R.C.P., Physician-in-Chief

"No better Atmosphere in the World for a Consumptive than that of your own Muskoka."
Sir Wm. Osler

Regular Rates $15 to $20 per week

Separate Accommodation for advanced cases in Reception Hospital Rates from $25 per week

Reception Hospital for Advanced Cases

THE HIGH PARK

(TORONTO)

SANITARIUM

(Affiliated with Battle Creek Sanitarium)

CANADIAN EXPONENT OF THE

BATTLE CREEK SYSTEM

A most scientifically equipped private medical institution for the treatment of chronic cases

Neurasthenia, Dyspepsia, Rheumatism, Diabetes, Anemia, Obesity, Goitre, Paralysis, Cardiac and Renal Diseases.

Unexcelled facilities for the administration of Massage, Swedish Movements, Special Dietaries, Medical Electricity and Baths of all kinds, including the Electric Light Bath.

Beautifully located in extensive private grounds adjacent to 500 acres natural park.

Private water supply from artesian mineral spring.

An ideal place for the semi-invalid to recuperate health and strength, or for the office worker to spend a profitable vacation.

For rates and descriptive literature address:

W. J. McCORMICK, M. D., Supt.

32 Gothic Avenue Toronto. Telephone Jct. 444.

INCINERATORS

For cities, or towns of any size, also for use in hospitals, hotels, or large camps.

High Temperature System Utilized.

Garbage Burned without Fuel except the garbage itself.

Steam for power purposes, **generated from the waste gases.**

Plants erected by

MESSRS. HEENAN & FROUDE of CANADA, LTD.

LAURIE & LAMB, Managers

211-212 Board of Trade Building - MONTREAL

THE SANITARY RECORD and MUNICIPAL ENGINEERING.

37th Year of Publication.

EVERY CANADIAN HEALTH OFFICER AND SURVEYOR SHOULD BECOME A SUBSCRIBER.

Published Weekly. Annual Subscription for Canada, $4.14, Post Free, including Handsome Cloth Bound Year Book, Diary and Blotter of 200 pages.

"THE SANITARY RECORD" is the Oldest and Leading organ in Great Britain devoted to Public Health, and contains the latest and best information of English practice on :—

WATER SUPPLY AND SEWERAGE,
HOUSING AND TOWN PLANNING,
ROAD CONSTRUCTION AND MAINTENANCE,
LIGHTING, HEATING AND VENTILATING,
PUBLIC HEALTH ADMINISTRATION,
MUNICIPAL ENGINEERING AND SURVEYING,
NOTES AND QUERIES, etc., etc.

Specimen Copy and Advertising Tariff free on application.

Head Offices: 55-56 Chancery Lane, London, W.C., Eng.

These trade-mark crisscross lines on every package

SPECIAL DIETETIC FOOD

For the cases of KIDNEY AND LIVER TROUBLES REQUIRING RATHER STRICT DIET

Unlike other goods, ask your physician. Leading grocers. For book or sample, write

FARWELL & RHINES, Watertown, N.Y., U.S.A.

"NOSTRUMS AND QUACKERY"

[Second Edition]

Caveat Emptor! (Let the Buyer Beware!)

If you would protect your patients against the dangers of "patent medicines" and the wiles of the quack, you need the book "*Nostrums and Quackery.*" The composition of fraudulent "patent medicines" and the dangers one runs in taking them, are explained in this book. The inner workings of quack concerns, the methods employed by these charlatans in obtaining victims, the heartlessness of the fraud on which all irregular medical practice is based—these too, are made plain.

HERE ARE A FEW OF THE MANY SUBJECTS WITH WHICH IT DEALS:

Advertising Specialists	Deafness Cures	Medical Institutes	Baby Killers	Headache Cures
Cancer Cures	Drug Cures	Obesity Cures	Diabetes Cures	Fake Colleges
Consumption Cures	Mechanical Fakes	Asthma Cures	Hair Dyes	Testimonials

This book is issued in a permanent and attractive form, bound in dark green cloth, stamped in gold. More than 700 pages. Over 300 illustrations.

Price **$1.50,** *Postpaid* *Send Postal for a Descriptive Circular*

"CONSUMPTION CURE FAKES" is the name of one of many pamphlets issued by the Association. It is an illustrated brochure that exposes some of the most widely advertised frauds sold as cures for consumption. *Postpaid, 10 cents a copy.*

AMERICAN MEDICAL ASSOCIATION, 535 N. Dearborn St., Chicago

THE JOURNAL OF COMMERCE

With which is incorporated THE SHAREHOLDER

TWO of the oldest and most reliable Weekly Journals, recently amalgamated to strengthen the work heretofore done by each in the field of Commerce, Finance, Insurance and Industry. Editor, *J. C. Ross, M.A.*

Canada's greatest asset is her natural resources, and the commodities by which she is best known are the products of industries engaged in the development of these resources. Canadian ASBESTOS, NICKEL and COBALT control the Markets of the world for these commodities, while her SILVER, PULP and PAPER, and GRAIN and GRAIN PRODUCTS are dominant factors of the world's supplies. The only Periodicals which are devoted entirely to these industries are:

CANADIAN MINING JOURNAL, published twice a month. Editor, *Reginald E. Hore, M.Sc.*

PULP AND PAPER MAGAZINE OF CANADA, published twice a month. Editor, *A. Gordon McIntyre. B.A., B.Sc.*

CANADIAN MILLER AND CEREALIST, published once a month. Editor, *J. G. Adams, B.A.*

CANADIAN TEXTILE JOURNAL, a monthly periodical devoted entirely to Textile Manufacturing, is published from the same Offices. Editor, *E. Stanley Bates.*

In addition to publishing the above mentioned Journals, we are especially equipped to do all kinds of

FINE BOOK, CATALOGUE AND JOB PRINTING.

MONTREAL OFFICE:
Industrial and Educational Press, Limited
Read Building

TORONTO OFFICE:
Industrial and Technical Press, Limited
44-46 Lombard St.

Standard Methods For The Examination of Water and Sewage

NEW REPORT, SECOND EDITION, 1912

At the Annual Meeting of the Canadian Public Health Association, September 18, 1913, the following resolution was unanimously adopted :—"That the Standard Laboratory Methods of the American Public Health Association be adopted as the standard of the Canadian Public Health Association."

This book, comprising about 150 pages, is the Official Report of the Committees of the Laboratory Section of the American Public Health Association on the physical, chemical, microscopical and bacteriological examination of water.

WHAT IT CONTAINS

It contains invaluable information for all public health laboratory workers, and among many other interesting features the following:

Latest and approved methods of water analysis including many changes and improvements over those incorporated in former report, issued in 1905.

Latest methods of sanitary analysis of water, and complete and thoroughly revised data on the mineral analysis of water.

New and rapid methods for the control of water softening plants.

Complete procedure to be used in the separation and determination of lead, zinc, copper and tin.

Thoroughly revised and complete information concerning the methods of bacteriological examination for intestinal organisms found in water.

Special information on the isolation of typhoid and other pathogenic organisms from water.

Revised data on the making of necessary media for bacteriological analysis.

THIS REPORT IS INVALUABLE FOR ANYONE WHO HAS TO MAKE ANALYSES OF WATER. NO LABORATORY DEALING WITH QUESTIONS OF THIS KIND CAN AFFORD TO BE WITHOUT IT.

Attractively Printed. Bound in Waterproof Cloth. 144 pp.

Price: $1.25 Postpaid.

ORDER FROM

American Journal of Public Health, 755 Boylston St., Boston, Mass.

AMERICAN JOURNAL OF PUBLIC HEALTH

The Official Monthly Journal of the American Public Health Association

30 Cents a Copy. $3.00 a Year, Three months' trial subscription to new subscribers for 50 cents

SEROBACTERINS

(Sensitized Bacterial Vaccines)

Serobacterins are standardized suspensions of bacteria "sensitized" by treatment with specific immune serum.

Their "action is **sure, rapid, harmless** and **durable.**"
—A. Besredka

Advantages

1. **Produce active immunity promptly.**
2. **Dose may be repeated at 24 hour intervals.**
3. **Rarely cause local or general reactions.**
4. **Do not cause opsonic nor clinical negative phase.**
5. **Produce durable immunity.**

List	Indications
Acne Serobacterin	Acute and Chronic Acne.
Coli Serobacterin	Cystitis, Fistula in Ano, etc.
Neisser Serobacterin	Gonorrheal Infections.
Pneumo-Serobacterin	Pneumonia, Empyema.
Pneumo-Serobacterin Mixed	Mixed infections due to Pneumococcus, Staphylococcus and Streptococcus.
Staphylo-Serobacterin	Staphylococcic Infections.
Strepto-Serobacterin	Streptococcic Infections.
Typho-Serobacterin	Treatment of Typhoid Fever, and preventive immunization.
Strepto-Pneumo-Serobacterin	Rheumatism due to infections by the Streptococci and Pnemococci.
Staphylo-Strepto-Serobacterin	Mixed Infections, Furunculosis, Abscesses, etc.
Staphylo-Serobacterin Mixed	Mixed Infections, as Fistulous Sinuses, etc.
Staphylo-Acne Serobacterin	Acne with Mixed Infection.
Strepto-Serobacterin-Scarlatinal	Scarlet Fever and complications.

Supplied in the popular Mulford Asceptic Glass Syringes, ready for instant use.

Package containing 4 graduated syringes, $4.00
Single syringes - - - - - - 1.50

Complete Review of Serobacterins contained in Mulford Working Bulletin No. 18.

"We extend a cordial invitation to visit our exhibit, Space No. 42, at the A.M.A. meeting, and to "stop over" and inspect our Philadelphia and Glenolden Laboratories."

H. K. MULFORD CO., Philadelphia

Pharmaceutical and Biological Chemists

Philadelphia

New York Boston Kansas City St. Louis New Orleans Minneapolis
Chicago Atlanta Dallas Seattle San Francisco Toronto

I SHALL pass through this world, but once; any good, therefore that I can do, or any kindness that I can show to any human being, let me do it now; let me not defer nor neglect it, for I shall not pass this way again.

A Great Philanthropist

W. J. GAGE, ESQ.

Toronto

The
Public Health Journal

The Official Organ of The Canadian Public Health Association.

VOL. V TORONTO, CANADA, MAY, 1914 No. 5

Special Articles

THE EFFECT OF WATER FILTRATION—BIOLOGICAL AND CHEMICAL

By H. W. COWAN, C.E.

Toronto

Read before the 3rd Annual Congress of the Canadian Public Health Association, Regina, Sask.

IN presenting this paper to the members of the Public Health Association, an endeavor has been made to outline as briefly as possible—for the benefit of the engineer—the action of bacteria for good and ill. At the same time it is desired to put in a plea for the much maligned bacteria, which have just as much influence for good—in the natural performance of the world's work,—as they have for bad.

In the light of modern developments in bacteriology, perhaps too much stress is being laid on the entire elimination of bacteria from public water supplies, and it is attempted to give some logical reasons for a deduction which to many of the medical profession, must seem rank heresy.

The very general comparisons of methods of filtration given for the benefit of the medical men present, may appear puerile to the engineer, while the bacterial treatment must in turn be wearisome to those already conversant with it. Justification for an attempt to supply matter of interest to both professions is abundant, in consideration of the relationship which one bears to the other in regard to sanitation. Both are vitally interested, and cannot be dissociated in the carrying on of public health work, and the object—a difficult one—must plead for your complaisance in regard to the treatment of this paper.

In such an association papers should leave room for discussion, as it is chiefly through the intelligent interchange of thought and idea affecting public health work that fresh fields can be pointed out. The object of this address is to provoke discussion to that end, and no apology is therefore made for deductions which are wholly empirical. They appear to supply the only answers to results of laboratory research, which hard study of the numerous works of the leading authorities fails to disclose.

Bacteria and Their Functions.

Much argument has taken place as to whether bacteria are a form of plant or

animal life. One of the lowest forms of plant life, known to the botanical microscopist as Oscillariæ, possesses similar characteristics to the types of organisms called bacteria.

The chief difference is the presence of Chlorophyll in Oscillariæ, or the green colouring matter which enables the plant to derive nourishment from such simple foods as it can procure from the air and soil, in which it is present. It is the absence of chlorophyll in bacteria which forces them to live on more complex foods. Both have the power of motility, the same form, the same method of thread and spore formation, and may both be considered as true plants.

The simplest forms are typical of bacteria, spherical, cylindrical, or spiral. They are so minute that their diameters range from 0.000012 to 0.0003 inches. A coating of some gelatinous membrane seems to envelop most species, serving as a cement to keep them together. Their internal structure of protoplasm has never been definitely decided on, and is still much a matter of conjecture.

When massed into clusters bacteria are known as zooglœa, which differ from a colony, in that the latter is formed when a single bacterium is cultivated in some mass which presents too much resistance for the separation of the bacteria to any distance. Varying species form different characteristics in their colonies, which serve as a means of identification when under examination.

Bacteria multiply very rapidly, unless in unsuitable conditions, by the simple process of dividing in two, a process which can go on indefinitely until as many as 16,000,000 are produced in twenty-four hours. In addition to this simple method of propagation, some species produce spores. These are round or oval pieces of bacteria protoplasm, which develop until they finally break out of the original organism. When the original germ cannot exist, the spores are still to be found resisting very adverse conditions, and acting as a means of perpetuating the species.

A means of motility is supplied to many species, which have stringy membranes attached to them, sometimes one, two, or many, sometimes at one end, and sometimes at both. By lashing these membranes back and forward, a means of propulsion is supplied, which is very active when the germs are immersed in liquids.

The food of bacterial organisms is secured from the dead bodies of animals or plants, and their excretions, which they rapidly decompose in their operations for assimilation. Probably the rapidity of multiplication is due to not having to manufacture food, as in the case of other plants. In effecting the decomposition of substances, many chemical and physical changes are wrought, extensively made use of in the maceration industries.

The manufacture of linen, jute, hemp, fibre, leather, sponges, and the products of fermentation is chiefly dependent on the action of various forms of bacterial life. In still more important functions are bacteria necessary for the continuity of life, and the preservation of mankind. For the purpose of showing this some digression is allowable for consideration of other plants and their mode of existence.

No life could exist if the earth were littered with dead matter, but bacteria, acting as scavengers and putrefactive changes prevent such a happening. The earth surface has been the producer of the countless years of life. Plant life has extracted food from its soil and air without apparently diminishing the food supply.

The animal kingdom breathes oxygen and exhales it as carbon dioxide, which the vegetable kingdom inhales and returns as free oxygen to complete the cycle of life. Plants also consume nitrogenous food from the soil, in the form of nitrates, in combination with gaseous products of the air and other elements. These, solar energy transforms into starches, proteids, sugars, fats, etc., to supply animal life with nutrition.

Carbonic acid and water are returned by the animal in the assimilation of its food, to be again absorbed by plant life, but nitrogenous food is not returned in totol. Most of the nitrogen consumed by animal life is turned into albumens and the balance excreted. Even when the animal dies, the nitrogen is too complex in its compounds to form plant food, when recovered by disintegration.

The bacteria of decomposition and putrefaction now set to work to reduce most of the nitrogen compounds into suitable

feeding material for the plant, leaving the balance as nitrites, which in turn are too simple for plant food.

The soil abounds with organisms called nitrifying bacteria, which unite these nitrites with oxygen and transpose them into the nitrates necessary for the existence of the vegetable world. In decomposing, dead animal life frees a proportion of nitrogen which passes into the air, thus reducing the supply of nitrogenous food returned to the soil. More is lost in excretions taken direct to the sea in the form of sewage, while many of the chemicals used in the manufacture of explosives and other articles of commerce consume a large amount.

The farmer makes up this deficiency by the application of chemical fertilisers to the ground, but were the same soil freed from all plant life, and exposed to the air for a period, nitrogen fixation would be secured through the activity of bacteria in the earth. Not only in this way is dispersed nitrogen recovered, but also by an active co-operation of germ life with certain leguminous plants. These organisms attach themselves in globules or clusters to the roots of the vegetables, and with both agencies at work some nitrogen is fixed in the fibrous structure of the legume. Disintegration and rotting of the plant enables the stored-up nitrogen to be fixed in the soil.

In the scheme of life, therefore, bacteria have very important and definite functions to perform. Without them the recovery of nitrogen for plant food would be impossible, and the circle of life created by the energy of heat would cease. Were it possible to destroy germ life as a whole, the result would be the total extinction of all forms of life.

There are however other types of bacteria which are pathogenic, and have the power of reproduction in the human body, causing many diseases to which humanity is subject. The proportion of these to the harmless bacteria is fortunately small, but as they give rise to such sicknesses as typhoid, cholera, diphtheria, tuberculosis, lockjaw, anthrax, influenza, etc., they must be kept down. These germs produce by-products which act as virulent poisons to the human system, causing the diseases enumerated together with many others. They gain access through the mouth, nostrils, cuts and breaks in the skin, and set about reproduction by incubation until the disease gets a hold on the body. If the powers of resistance of the body are very great, the organisms are passed off in excreta, and the sickness is warded off. These resistive forces are not yet fully known, but science has established the presence of certain products in the body termed alexines which kill non-pathogenic germs. To combat the alexines the pathogenic bacteria create lysines to neutralize their action, and make the way clear for their depredations.

The invading bacteria are then attacked by the white corpuscles of the blood, which leave their usual habitation in the blood vessels and surround the attacking germs. The evidence of this is generally given by the appearance of inflammations, either internal or external, which break out and give pus, should the corpuscles be vanquished. With such contending influences in the body disease is warded off by those in robust health, and the importance of maintaining these resistive powers cannot be over-estimated, otherwise they will become useless through dissuetude.

The chief means of conveying the harmful bacteria to the body is by means of liquids which act as carrying agents in a greater degree than any other source. In consequence our drinking water supplies are of national importance, and the elimination of harmful or pathogenic germs from them the first essential to disease prevention.

Methods of Filtration.

The methods of filtration generally employed are to filter all water used for drinking purposes by means of sand filters, of which there are three distinct types—slow sand, gravity mechanical, and pressure mechanical. Of these the first and last are most commonly used in the older countries, while on the American continent, the first and second are favored. In the slow sand filter the water is allowed to flow through beds of sand and gravel, into collecting pipes placed under the filtering material, at rates varying from one to six million gallons per day per acre. They are generally constructed of brick and concrete, or both, and occupy a large area. Gravity mechanical filters are frequently construct-

ed of the same materials, or of wood or steel, containing sand overlying gravel, while pressure filters are entirely composed of steel. Both of these latter types operate at rates up to one hundred and seventy-five million gallons per day. The ratings given are for an area of one acre.

Before the sand in all types of filters performs effective work, it must be coated with a film which retains the bacteria in the passage of the water through the filter. The slow sand filter forms this filter naturally by the growth of vegetation, the deposit of fine clay particles, and the agglomeration of organisms. In the mechanical type the film is deposited by the addition of alum to the water, before it is applied to the sand bed. The alum reacts with the lime in the water, or with added lime if the water is deficient, and forms a gel or albuminous coagulent which is insoluble, and deposits on the sand bed.

In course of time this film becomes too impervious, and it is necessary to clean the surface of the filter to allow the water to find its way through. In the slow sand filter this is performed by scraping off the surface to a depth of about seven-eighths of an inch, and passing through a sand washer to make it ready for replacing when the sand bed gets too shallow to work satisfactorily. In the gravity mechanical and the pressure mechanical filters cleaning is carried out by the operation of valves to force the water back through the sand bed, where it is run to waste. Agitation is performed by means of compressed air or mechanical means to break up the sand, so that the reverse flow of water may do its work.

In the slow sand and gravity mechanical types of filters, water flows in by gravity or is raised by a pump, and allowed to flow through the filter under atmospheric pressure only, into a clear water reservoir from which the filtered water is pumped to the service pipes. In the pressure type of filter the water is forced through by means of a pump, or sufficient height of water to supply an equivalent pressure. The pressure filter is totally enclosed, while the other types are open.

It does not fall within the scope of this paper to enlarge on the merits of any particular type, beyond saying that with a properly designed plant and proper operation, they should all give equally high bacterial reduction. On leaving the filters it is common practice on this continent to treat the effluent with chlorine to reduce the bacteria content, and approach as nearly as possible a sterile water. With this practice the writer is not at all inclined to agree.

Chemistry of Filtration.

It is well known that the work performed by sand filters is to remove suspended solids, and to act in such a way that both chemical and biological changes are wrought in the treated water. In considering the presence of dissolved substances in the water, it is found that chlorides do not vary much, neither increasing or diminishing in passing through the filters. Nitrates vary either to a greater or lesser extent, and sulphates and carbonates remain pretty much the same. In both slow sand and mechanical filters, the chlorine content as indicated by the presence of chlorides seldom varies, while in both cases the carbonates are reduced about one grain per gallon. Albuminoid ammonia is reduced by mechanical filters from 15 to 90% according to the water treated, and an average of about 60% in the case of slow sand filters.

Free or saline ammonia is reduced from 33 to 50%, and sometimes as high as 95%, in mechanical and slow sand filters respectively. The oxygen absorbed varies from 50 to 90% reduction with mechanical filters, as against 40 to 50% with slow sand filters.

Mechanical filters reduce nitrates and nitrites from 5 to 60%, while the slow sand filter ranges from 10 to 30%. Before discussing how these changes may be brought about by filtration, it is interesting to note that mechanical filters are much more uniform in their results than slow sand filters in the reduction of albuminoid ammonia. In three months' observation of tests made every third day, while the raw water content varied from .002 to .0067 grains per gallon, the effluent only varied in its quantity from .002 to .00265 in one series of tests. Another series during the same period, showed the variation from .003 to .0039, with the raw water containing from .0046 to .0067 grains per gallon. At the same time tests were made with slow sand

filters treating the same water, in which albuminoid ammonia was present in quantities of .0063 to .0064 grains per gallon, the effluent varied from .0035 to .0059 grains per gallon. The mechanical filters therefore, while treating water with considerable variation in quantity of albuminoid ammonia, contained practically the same amount in the effluent. In the slow sand tests the results were just the reverse, and laboratory practice further accentuates the difference.

In mechanical filters, sulphates increase from one-half to one grain per gallon, due to the addition of alum which dissociates sulphuric acid in hydration.

The presence of chlorides, unless they can be accounted for by proximity to the sea, or natural salt deposits, gives an indication of sewage pollution of the water supply. Before the advent of bacteriology, nitrates were used to determine the standard of purity but their presence is no longer considered except to call for confirmation of sewage pollution by bacterial tests. Water high in nitrites, however, should be condemned, until exhaustive tests have been made and their source accounted for. More free ammonia than albuminoid ammonia is a sure indication of the presence of polluting matters, as in normal waters the albuminoid at least equals free ammonia. If much oxygen is consumed in testing, the probability is that pollution has occurred unless with waters high in colour, where the original oxygen has been depleted in oxidising the vegetation.

Bacterial reduction in all filters of the types mentioned, operated on the same water with the same care, and with suitable rates of filtration, with suitable water for all types, should be much the same, ranging from 85 to 100% according to the count of bacteria in the untreated water.

The Filter Film.

In performing these changes consideration must be given to the nature of the film on the sand, and its action, so that we may be able to judge what is more likely to give constant results when dealing with any particular type of water. The film on the slow sand filter is composed of fine particles of clay and mud, of green and blue algæ, fungi, bateria, etc., which very soon propagate under favorable conditions, when the water contains the original propagators. The bacterial bodies present mass themselves in zoogloœa, or into colonies, and putrefactive changes in many of the diatoms produce slimy brownish masses of matter. These form a net work over the surface of the sand, which is bound together by the active diatoms, and the whole mass coheres and feeds on other organisms, or the same placed thereon in the act of filtering. At the same time there is constant destruction going on in the film, between opposing plants, which is the primary cause of the expert attention required in the care of slow sand filters, so that the film may be guarded against rupture. Algæ has quite a purifying action in the removal of bacteria, without the assistance of other diatoms, and performs useful functions in the purification of stored waters.

The whole of this mass is of a gelatinous, viscid, and sticky nature eminently suitable for adhesion of particles coming in contact with it. Each particle of sand on the upper layers of the filter becomes wrapped in a coating of the sticky substance and a drop of water flowing around that particle will leave any minute organisms sticking to the coating of the sand, to be sucked in and retained, if not disturbed by vibration or variations of flow in the passage of the water.

The vegetation in this film is suited to the action of nitrifying bacteria, which transform the ammonia content of the raw water into nitrates and nitrites, reducing the ammonia and increasing the nitrogen. Where a reduction of one is shown, without an increase of the other, the ammonia content has been very small, in other cases there may be sufficient ammonia present in organic matters in the water for the nitrogen to show an increase not wholly due to transformation of ammonia products into nitrogenous, from the water.

Albuminoid ammonia on the other hand forms food for many forms of bacteria, which transform it into various fatty compounds, gases, and water. Decomposition again sets in, and nitrates, ammonia, carbonic acid and water are the final products. Thus we can readily see that the feeding stuffs necessary to the life of bacteria on the sand bed, are drawn from the water, with the consequent reduction

of these food stuffs after the water is filtered.

In the film formed in mechanical filters the work performed appears to be mostly of an adsorptive nature, the deposit being more like a membrane full of minute cells, which are closed, and present a very large surface when wrapping round the particles of sand on the upper layers of the filter. These minute cells of the gel are continuously opening and closing, giving up the necessary amount of water each time to equalize the vapour pressure with the surrounding fluid. It has been found that by removing the water from colloidal substances, various chemical compounds holding varying amounts of water are not formed in cycles, but that the water content changes continuously. Thus the coagulation of a hydrate makes a kind of tissue, neither solid nor liquid, which encloses liquid. With this construction it may readily be understood that the enclosed water in the cells may, in being replaced by other water containing a minute organism, leave the organism in the sticky cell, when it opens to allow of the absorption of a fresh quantity of liquid.

Heat is destructive of the adsorptive properties of the gel membrane, probably by contracting or stretching the formation until the cells collapse into a flat plane. The great surface tension of the colloid and the pulsation movement of the innumerable cells, in opening and closing, explains the suction like action of the film in drawing in gelatinous or minute substances, while its viscosity and stickiness aid in the retention of these foreign matters.

Every weathering process in nature is productive of some form of gel in regard to its minerals, stalactitic, botryoidal, or glassy in form, with fibrous fractures, sometimes being found even in a gelatinous state. The filtering action of nature in well waters and successful infiltrations is probably due to the action of these gels. Their absence in some vicinities certainly accounts for the failure of similar constructions, when these are apparently exactly the same, but in a locality with a totally different mineral deposit.

Biological and Aesthetic Considerations.

In common with the changes caused chemically and bacterially, there are many other biological changes desirable for the securing of the more aesthetic qualities of a water supply, such as colour, taste, and odor. The mechanical filter is highly successful in treating waters which have to be dealt with in regard to these qualtities, The slow sand filter rarely removes more than 20% of the colour, while with the mechanical filter total elimination is possible. Odors which are caused by decomposition of vegetable matter are rarely disagreeable, but living organisms, or vegetation may also cause them. Many forms of bacterial or organic growth give off matters of an oily nature, which have a smell peculiar to the species from which they are exuded, in a way analogous to the poisons given off in the body by pathogenic bacteria.

Agitation may break up these bubbles of oil and spread them through the water until the odor is accentuated. In the same way heat, when applied, scatters the oily products and exaggerates the odor until it can be definitely compared with others known to the physical sense. The number of such organisms present in the raw water determine the intensity of the odor, and the various intensities may make the smells appear different, while they are really produced by the same organism.

It is possible that the substances producing the afore-mentioned qualities may have a poisonous effect on the human system, but unfortunately science has not yet been successful in demonstrating this.

Odors of decomposition are usually set up in the water pipes of a system, by the action of the filaments of plant life attaching themselves to the inside of the walls, propagating there, then becoming detached when in a state of partial decomposition. This is the frequent cause of pitted pipes, as the preservative coating is detached along with the organism, allowing rust to set in. Every system should be flushed out completely and thoroughly, periodically, as a safeguard to the preserving of the pipes against such action, and the maintaining of the physical qualities of the water at the highest standard.

Color is entirely the result of dissolved vegetable matter, and is therefore generally associated with taste or odor produced by the same substances. The oxygen used in the oxidizing of the vegetation in solution sometimes gives an insipid taste to the water, which is simply removed by aeration, to replace the occluded oxygen.

In the removal of odors due to organisms, filtration is effective, while the adsorptive tendencies of coagulents collect the globules of oil, together with the organisms producing them. Products of decomposition are retained in the same manner, and those growths which attach themselves to the piping in the water system are prevented from passing into the supply. They cannot then become nauseating by detachment.

Nature has been copied as closely as possible in the filtration of public water supplies, and the results of slow sand and mechanical filters are practically the same as those performed naturally.

Auxiliary Chemical Treatment.

When water is too soft, it frequently sets up an acid reaction, particularly in the case of peat discolored supplies, which has the effect of dissolving the piping through which it is conveyed. This brings about lead poisoning to the consumer. The absence of mineral salts is a plausible cause of rickets and bone weaknesses.

Waters which are very hard may also be productive of plumbo solvency when they give an acid reaction, and are frequent causes of constipation and troubles of the digestive organs.

Extreme hardness leads to a stunted and ossified growth in individuals, as is well instanced in the Cretins, a race of dwarfed people who live near the Swiss borders, and use very hard waters.

The commercial side is also important, as the extra cost of fuel with hard waters and the high cost of soap to a community is very burdensome. With such waters hardening should take place prior to filtration, or softening where necessary, by the addition of lime water to increase hardness, or an excess to reduce the same trouble.

Danger in Extreme Purification.

A note of warning might well be sounded before attempting to exceed the results produced by natural means, as is the tendency in Canada at the present time.

The exigencies of modern civilization demand the collection of human beings in congested sites for the pursuit of industry. The consequent polluting of water supplies, with the subsequent necessity for treating them follows.

In the old tribal times there were no large communities gathered together for a long period of time. The people were constantly moving from one camping ground to another, and oxidization had time to effect purification after a site had been deserted. The spread of disease was to a great extent safeguarded by the absence of a means of conveyance in the shape of water systems, public vehicles, etc., and the water supply was carefully guarded from pollution by those in the camp using them. The dread intestinal diseases of bacterial origin were not much heard of until the commencement of the industrial era, and most of the scourges which attacked communities were of a zymotic nature, rather than an intestinal.

Is there not a possibility that attempts to purify our drinking supplies are being carried too far? Would it not be wise to determine what is the maximum extent to which it is safe to go?

The healthiest communities are those with natural water supplies, often carrying a large bacteria count of harmless germs, with a small proportion of mineral salts. Yet modern demands cry out for sterilized drinking water. Even distilled water, devoid of all natural salts, is being largely consumed, while recent investigations into the large number of tubercular patients in navies using distilled water exclusively, point to the demineralization of the human system as conducive to the inroads of the tubercular germ. Much interest will be shown in the experiments now being conducted by French scientists to prove that the absence of mineral salts in drinking waters is a forerunner of the wasting disease.

An attempt has been made to show the vast importance of bacteria in the great scheme of existence. Are we not eliminating some of the bacteria which an all-seeing Providence has provided for the performance of vital functions in the body?

Prof. Metchinkoff, in one of the most interesting and masterly treatises of modern times, in summing up the results of his investigations into the longevity of a European race, demonstrates clearly that the scouring action of bacteria present in their national beverage of sour milk is probably the reason for the felicity obtained by that people.

In our food and drinking supplies, water conveys bacteria directly from the soil, other bacteria are deposited after cooking by touch, from the air, and by contact, while fruit is mostly removed from its peel or skin, and therefore from the greater part of its bacterial life. Useful bacteria can therefore have drinking water as a possible conveyor only.

It is not known what action harmless germs have on the human body, and the body's curative agents have power to combat the inroads of harmful bacteria, when their numbers are not too great. As the proportion of harmful bacteria to harmless is small, an effluent filter removing about 98% of the total bacteria count in drinking water, can leave few if any pathogenic germs to play havoc with the consumer. Even the few which might escape will perform good work in providing exercise for the resistive forces of the body, and preventing their becoming defunct through dissuetude.

Potable waters in Canada after filtration are invariably treated by chlorine as an additional preventative, with the tendency to produce bacterial sterility. This has been brought about by the use of filters, whose operation is not all that can be desired, and is a slur on the engineering profession generally, which may have very far reaching consequences. There are filters which can be relied on, without the use of sterilizing agents, and the sooner engineers make use of them, or design others to perform first-class work, the sooner will doubtful practice be removed.

Any of the types of filters described can be made to give such results, if they are not hampered by considerations of cutting down cost.

The greater evil is facing modern times in resorting to practice of whose effect we are ignorant, when natural means of treatment will give a margin of certain safety.

As has been pointed out, water may be the only source of organisms necessary for the proper performance of bio-chemical functions in the body. The removal of these germs would make the functions of the body entirely chemical, a position which might lead to the destruction of the body's tissues until it could be adjustified to the new order of things.

Chlorination, sterilization by ozone, distillation and other means of securing final sterilization are being carried on at the present time in entire ignorance of all the uses to the body of those very properties which are being destroyed.

The whole tendency of modern therapeutics is towards prevention of disease by sanitation, or the use of anti-toxines, or its retardation by small doses of reactionary drugs to stay the progress of the disease, until the recuperative powers can reassert themselves.

Why then should these very recuperative powers be weakened by extreme preventive measures?

A census of operative cases, such as appendicitis in cities using chlorination, or other sterilization treatment, might produce interesting results. In cases of strangers succumbing to disease when in strange cities, a census might also be taken and consideration given as to whether their resistive powers had not been weakened by the water treatment in their home town.

Would it not be wise to withhold drastic treatment, until the need for it has been scientifically demonstrated, and its effect on the body placed beyond doubt?

The importance of this point is too great to be neglected, and affords excuse for the somewhat lengthy discussion of bacterial life at the beginning of this paper.

ISOLATION HOSPITAL PLANNING AND MANAGEMENT

By T. H. WHITELAW, M.B., M.O.H.

City of Edmonton, Alberta

Read before the Third Annual Congress of the Canadian Public Health Association Regina, Sask.

THE subject of this paper is one which is closely associated with the prevention of disease, a subject, moreover, which has not yet been given the attention it deserves. In endeavoring to limit and prevent contagious disease in any municipality, it is essential that a Medical Officer of Health should have provided by that municipality an adequate and well equipped hospital or hospitals for contagious diseases. Too often the contagious disease hospital provided by municipalities is vastly inferior in design, construction, equipment and capacity to general hospitals, more or less dependent on charitable and private donations; and, as a result of this, complaints of a more or less querulous nature emanate from many quarters and individuals, which newspaper reporters delight to publish and enlarge upon under sensational headlines, until the public get the impression that the contagious disease hospital is simply an institution for the forced incarceration of the unfortunates, who are alleged to be subject to the danger of contracting all the infectious diseases in the category of medicine. The responsibility for all such defects and conditions, whether real or imaginary, is almost invariably placed upon the unlucky Health Officier, who, justly or unjustly, generally the latter, has to bear the brunt of all public criticism.

Why does a municipal hospital for the treatment of infectious diseases bear so close a relation to their control?

1. Because of the lack of proper facilities for isolation and treatment in the average home. This is particularly true of rapidly growing cities and towns of Western Canada, and the exorbitant rent of houses.

2. Because of the difficulty of having quarantine regulations properly observed at home.

3. Because in a well conducted hospital, one may more closely approach absolute isolation, and keep the patient under conditions more liable to prevent complications arising.

4. Because by removing the patient from the home, the inconvenience to the well inmates and loss of business and social intercourse may be avoided.

It is a matter of experience that the prompt removal of a case of diphtheria or scarlet fever from a house, very frequently means the protection of the other inmates, and the limitation of the disease to the individual case removed. With measles, however, this is not the case, as all susceptible cases are usually in the incubation stage before the first case is discovered and removed.

In well conducted hospitals, moreover, it has been demonstrated that the death rate is less than half what it is among cases treated at home. We have only to visit the houses of the poorer classes from which the great majority of our patients come, to realize why this should be the case. Both from the standpoint of the patient himself and the community generally, it is advantageous that the great majority of our cases of infectious disease should be treated in a contagious disease hospital, equipped and conducted in such a manner that the patient himself not only receives the best of care and treatment for the particular disease he has, but is protected from acquiring other diseases which are being treated, or which other patients may bring into the institution, impossible of diagnosis at the time of admission.

Before discussing the question of the different types of hospitals, I may be permitted in a general way to outline the conditions under which I believe patients should be admitted to the wards of a contagious hospital. The opinions I have to offer are based entirely on the experience I have had during the last six years with the somewhat imperfect and inadequate isolation hospital facilities provided in the City of Edmonton. It is only fair to say that these unsatisfactory conditions are largely due to the unprecedented and rapid growth of our population, and to the occurrence of a fire in 1912, which destroyed half of the hospital, which at that time was fairly well equipped and sufficient to meet the needs of the community, under normal conditions.

The ideal condition which, of course, is unattainable, on account of excessive cost, except perhaps in the larger cities of the world, and which alone could prevent the possibility of cross infection, would necessitate the provision of a separate ward for each and every patient admitted, with a staff of nurses in attendance specially trained in medical and surgical asepsis. It being acknowledged therefore that patients admitted to public wards must necessarily be associated with other patients, presumably suffering from the same disease, and that it is not generally possible to obtain the best nursing efficiency, certain measures of precaution are necessary if the danger of cross-infection, the bugbear of isolation hospitals, is to be reduced to a minimum, and to this end the planning and construction of such hospitals should pay due regard, apart altogether from the facilities provided for the comfort and proper treatment of the patients.

The general principles governing the admittance and after treatment of patients may be enumerated as follows:

1. A special entrance for patients should be provided, from which ready access should be had to receiving rooms, specially fitted for the reception and bathing of the patient. These receiving rooms should be two in number, one to be always ready for any emergency. Where possible, it would be advantageous to have a special entrance for each of the more serious diseases treated, especially scarlet fever and diphtheria.

2. The patient having been received, he should be disrobed, and his clothing at once removed to the disinfecting room When the condition of the patient does not contraindicate it, a warm bath should be given, after which he may be placed in the ward assigned to him. When the slightest doubt exists as to the diagnosis (and it must be admitted that such cases are not uncommon), the patient should be placed in a detention or observation ward until all doubt is removed, when he may be removed to another ward, and the detention ward disinfected and prepared for the next doubtful case. As many of these detention or observation rooms as possible should be provided with individual toilets and baths, but the prohibitive cost of such an arrangement makes it almost impracticable except for very large cities. Therefore, in most cases it would have to be limited to a few rooms for the isolation and observation of doubtful cases. From four to twelve days after removal from the detention ward, the patient should be kept in a single-bedded ward, or at least in a ward of few beds, at most six, until it is ascertained he is not developing a second infection, which he may have had in the incubation stage when admitted. This will limit the danger of cross-infection due to the possibility of error in diagnosis, and mixed or double infection. The time he should be kept here will depend on the nature of the disease. If measles, he need only be detained four or five days to guard against scarlet fever developing. If scarlet fever, at least twelve days as a safeguard against measles. In conditions other than diphtheria, especially scarlet fever, where there is even a slightly sore throat, a negative swab should be obtained before passing the patient on further. If suspected diphtheria, where antitoxin has been freely used, no risk to the patient need be apprehended from the proximity of diphtheria cases, if his case should eventually be shown to be negative for diphtheria. After detention for the number of days that may be necessary, to guard against the development of a second infection other than that for which he was admitted, he may then be safely placed

in a large public ward with other convalescents. As a general principle, which I desire to emphasize, only convalescents should be placed in a ward of many beds. This convalescent ward may be made as large as the needs of the community demand.

3. There should be separate provision made for male and female patients. In this connection it should be pointed out that the majority of our patients for the last five years have been adults. Objections have also been made as to the impropriety of keeping children of both sexes in the same ward.

Similar and separate provision along the same lines should be made for scarlet fever and diphtheria. The same may be said of measles, though it is not so important from the public health standpoint to remove measles to a hospital. From the standpoint of the patients themselves, though, it is equally important, as I have found measles to be almost as serious a disease as the other two. Many young men and women living in rooming houses and hotels have contracted measles of a severe type, and provision must be made for them in an isolation hospital, as they cannot obtain proper care, treatment or isolation at home. Even in some of our large cities I am aware that no hospital provision has yet been made for measles, outside the home.

4. A general utility division of the hospital should be provided for the various minor infections, such as erysipelas, chickenpox, mumps, whooping cough and advanced tuberculosis where no sanatorium is provided. Of such diseases, except tuberculosis, usually too limited a number will apply for hospital treatment to make it necessary to provide separate and distinct quarters, and in any case it is manifestly impossible to provide such. Nevertheless, inasmuch as many young men and women of our city are living in rooming houses and hotels, and are subject to such infections, provision must be made for their removal to a hospital, and the only hospital which can or will receive them, is an isolation hospital. Such a division of a hospital should therefore be provided with a series of small wards, and all the necessary precautions taken to prevent cross-infection by careful nursing and the practice of medical asepsis. Smallpox cases should be isolated in a separate and distinct building, though it is quite possible to treat them safely in a wing or unit of an isolation hospital. It is a noteworthy fact that Berlin, Germany, has no accommodation for smallpox other than a special ward of twelve beds in a general hospital. This is, however, in an adequately vaccinated and revaccinated community, which condition, unfortunately, there seems to be little prospect of English-speaking nations ever attaining to.

To recapitulate, the ideal hospital should as far as possible provide three gradations during the course of treatment of each patient.

1. The admittance or observation ward to provide against mistakes in diagnosis, and possibly double infection.

2. The ward of one or two beds to which the patient is removed for further detention, until he has safely passed the incubation period of infections, other than that for which he was admitted.

3. The convalescent wards, which may contain as many as 20 beds.

Such an arrangement is advisable or necessary, whether the hospital be constructed on the pavilion plan or otherwise.

Some authorities continue to insist on the pavilion plan, that is, a separate pavilion for each disease treated, with a central non-infected or administration building. Others have the different diseases located on different floors or portions of the same building, more or less isolated from one another. The pavilion plan has admittedly some advantages, especially when it is difficult to get good nursing efficiency and a service amenable to the strictest discipline.

The disadvantages are, the excessive cost at the outset for ground and building and the extra expense required for maintenance, especially the heating, which, in the winter months in our cold Canadian climate, becomes a serious problem. I suspect very strongly that the chief reason why the pavilion plan is so frequently advised, is that the theory of the aerial conveyance of disease, so firmly believed in by the laity, still influences many members of our profession and even

some of our sanitarians, in spite of the growing volume of evidence tending to disprove this hereditary fallacy. That the air borne theory of infectious disease is a fallacy, has for some time been apparent to me as a result of actual experience, but that it is still a firmly fixed conviction in the public mind, is evidenced by the clamor of protest that is certain to arise when a new location for an isolation hospital is suggested in any of our cities, within a reasonable distance of a residential area. And this clamor frequently receives the support of the press, and the tacit, if not the actual approval, of many members of our own profession. The wicked little germs are suposed to exist around an isolation hospital in myriads ready to take advantage of a favorable breeze to volaplane themselves in any direction, and to any given distance, in search of fresh victims.

The theory of contact infection appears to be gaining ground, and is now accepted by the great majority of leading contagious disease experts. This theory of contact infection maintains that persons, not things, are chiefly responsible for the transference of infectious disease, and that infectious diseases are not carried by the air, but by something or somebody coming in contact with patients suffering from a disease, and transmitting it to a healthy individual, or becoming infected by contact with that something or somebody. Heretofore, epidemics of contagious diseases have usually been combatted on the theory that infection is carried by the air, and it is only very recently that physicians and hospitals have begun to adopt the theories of Pasteur on the subject of contact infection. So far as air infection is concerned, contact infection only recognizes droplet infection due to speaking or coughing upon anything or anyone at close range. Rosenau in his recent excellent work on "Preventive Medicine and Hygiene," states that communicable diseases are not conveyed from ward to ward, or even from bed to bed, in well managed hospitals. He further states that at the Kingston Avenue Hospital in Brooklyn, various diseases, as smallpox, measles, scarlet fever and diphtheria are treated in wards only a few feet apart, with no evidence of aerial transference. At North Brothers Island similar methods are followed with equally good results.

At the Pasteur Institute, Paris, patients are each cared for in a separate ward opening on a common hall. The same nurses go from case to case. In two and one-half years there were treated 2,000 persons, of whom 524 had smallpox, 443 diphtheria, 126 measles, 163 erysipelas, 92 scarlet fever and 166 non-diphtheritic sore throat. During this time the only evidence of transfer of infection was the development of four cases of smallpox and two of measles. In the Children's Hospital in Paris, where the beds are separated by partitions only, there were but seven cross-infections, six of measles and one of diptheria, among 5,017 cases treated, and these were attributed to lapses of aseptic precautions. In England similar methods have been tried with success in various hospitals. Dr. Chapin, of Providence, Rhode Island, in his recent work on "Modes and Methods of Infection," has accumulated a mass of evidence which strongly supports contact infection as the chief factor in the spread of infectious disease.

The contagious group of the Providence City Hospital is conducted in accordance with his theories, and wholly disregards air infection. In a report on this hospital, which time will not permit me to go into in detail, Dr. Richardson, the superintendent, gives much information of interest. A set of rules, based on and designed to prevent contact infection, is given to everyone. Special regulations are enforced, governing the conduct of nurses, ward maids, laundry men and physicians, and the care of soiled, infected or clean clothing, gowns, towels, dishes, thermometers, bed pans and urinals, and all other articles used by the patients. All garbage is burned. Special emphasis is placed on washing the hands, and the most fertile source of infection is believed by him to be the patient himself. New patients are taken to the admitting room in each ward in order to make a correct diagnosis, to rule out mixed infections, and if there is any doubt to isolate the case until a decision is reached. From the admitting room the patient is either sent to the detention

rooms, guarded by a red card, if necessary, or to the isolation ward.

The first floor of this isolation ward has ten single rooms, five on each side of a common corridor, from which a view can be had into each room through a window, by a nurse in passing. Each patient is provided with such articles as will be used constantly, which are kept in the room until vacated. On discharge of the patient, the bed and furniture, floors, doorknobs, wash basins and walls within reach are washed with soap and water.

The second storey, consisting of one, two and three-bedded rooms, is equipped similarly to the first, giving accommodation to fifteen patients. The doors are left wide open, and the wind sweeps freely through the rooms in warm weather, when the windows are opened also. In this ward there were treated in ten months 140 cases of the following diseases: Scarlet fever, diphtheria, measles, chickenpox, whooping cough, mumps, gonnorheal vaginitis, rubella, crysipelas, and 25 cases of non-infectious disease. Varying combinations of the above diseases in the same individual, or double infection, are also included in this list. During this ten months, one case of measles and one of chickenpox developed among the 140 cases treated. He does not state whether these were cases admitted in the incubation stage of these diseases or not. He finally states that no case of cross-infection has occurred in eight months.

It must be admitted that the results obtained justify the building of hospitals for communicable diseases with a disregard for aerial infection, and with absolute adherence to the principle of contact infection. Why then should we follow the fetish of aerial infection, and enter no protest against the arguments used in favor of pavilion hospitals, with all their attendant inconveniences and unnecessary expense, especially where in winter extremes as low as 40 degrees below zero are reached? Why should we not be able to raise the standard of nursing and attendant's efficiency to such a degree that we can duplicate the results achieved in the hospitals quoted?

The plans here shown have been prepared for the new Edmonton Isolation Hospital, and follow in some respects the new Winnipeg hospital, in the building of which, I understand, it was decided, after careful consideration, not to follow the pavilion principle, but to build a solid building of five storeys, as more suitable to the climatic conditions of Western Canada.

These plans are not by any means the plans of the ideal hospital, with glass partitions and many fully and expensively equipped individual wards, but while the money voted will not permit of the building of a Pasteur Institute, or a similar hospital, there is no reason why the same methods used with such marked success in such institutions, should not be used in moderately expensive hospitals to as great an extent as possible.

It is evident that to be effective, isolation hospitals must cost more per bed than ordinary hospitals, and always provide an excess of beds over the number of patients ever likely to be under treatment at one time, to provide for any emergency. Overcrowding in any hospital is bad. In an isolation hospital it is a crime. More nurses in proportion to the patients must also be provided, and possessed of a high degree of intelligence. The first cost and expenses of management must therefore be high, in comparison with general hospitals, if they are to be effective and fulfill all the conditions I have outlined as essential.

Whether the plans here shown will finally be acted upon, though endorsed by our Board of Health and a committee of our Council, is uncertain, as the newly constituted Hospital Board of our city may be persuaded to adopt the pavilion principle in preference.

The ideal to be reached, whatever type of hospital is decided upon by a municipality, is that which most closely permits of the absolute isolation of the patient, at least until the patient has safely passed the incubation period of diseases, other than that for which he was admitted.

PUBLIC HEALTH IN SASKATCHEWAN

1906—1912

By M. M. SEYMOUR, M.D.,

Commissioner of Public Health for Saskatchewan, President of the Canadian Public Health Association.

Read before the Third Annual Congress of the Canadian Public Health Association, Regina, Sask.

IN the year 1905, the Province of Saskatchewan was formed out of what was part of the North-West Territory. Its area consists of 251,700 square miles, and its population at that time was estimated roughly at 257,432, or 1.05 per square mile.

The public health of the Province was controlled by the Public Health Ordinance of the North-West Territories, 1902, and administered by a branch of the Agricultural Department.

In the year 1906 the appointment of a Provincial Health Officer was made, whose time throughout the year was fully occupied in dealing with outbreaks of smallpox, scarlet fever, diptheria and typhoid, in different parts of the extensive territory under his control.

Scarlet fever occurred in a newly-formed settlement of Icelanders and Galicians in the Saltcoats district and was with difficulty got under control.

An extensive outbreak of smallpox took place in the south-eastern portion of the Province among settlers from Ontario and the Western States.

It was surprising what a large number of settlers from Ontario were unvaccinated.

Typhoid—the scourge of the West.

There were 383 cases reported and 120 deaths during 1906.

This enormous amount of typhoid fever in proportion to the population pointed at once to the necessity for the adoption of effective preventive measures.

The history of typhoid fever in other parts of the world was being repeated here.

"Wherever people congregate and live together without making adequate provision for the proper disposal of excrement typhoid fever invariably occurs."

Regina, Moose Jaw, Saskatoon and Prince Albert grew so rapidly during the first three years of Saskachewan's existence that it proved impossible to cope with the requirements for adequate sewage and water supply.

Reports were made to the Government calling attention to the importance of prevention of river and stream pollution by towns, sewerage, with a consequent pollution of our water supplies; the water supplies on the prairie being none too extensive. A bill that was drafted, prohibiting the pollution of streams and providing for the treatment of sewage to render it innocuous was felt to be too drastic a form of legislation for even Saskatchewan in its then stage of development; consequently the bill was dropped.

During 1906 also a large amount of railroad building was done and many cases of typhoid occured in the construction camps. Since that time regulations for the sanitary control of camps have been made, which place the responsibility for the care of the sick upon the contractor, but in those days there were none. A laborer who developed typhoid on the work was quickly got rid of, rushed off to the nearest hospital or dumped down anywhere else in a town.

Such cases as these were frequently the cause of extensive outbreaks.

To continue with typhoid up to this year: During 1907 outbreaks directly traceable to infected water supply occurred in Prince Albert and Saskatoon. In the latter place a bridge over the Saskatchewan River was in the course of erection by the C.P.R. Out of 75 men on the work 50 were laid up with typhoid from drinking the river water at the spot. This bridge was about half a mile below the outlet of one of the cities main sewers. Stopping the use of the river water and obtaining a supply from another

source ended the epidemic amongst the workers.

In the year 1908 there were 297 cases and 77 deaths reported. Several cases on the Goose Lake line were traced to sewage polluted water brought there by one of the railways.

An outbreak south of Grenfell started a fortnight after a picnic, at which cream was supplied for making ice cream, from a house in which were two cases of typhoid fever. There were 32 cases and two deaths.

Fifty-four cases of the disease and four deaths in another epidemic were traced to one dairy, in which a young man was employed who had recently recovered from typhoid. Typhoid bacilli were found in the milk being sold.

A number of cases were found to have used milk from a dairy, the milk of which had become infected by the washing of the cans in sewage polluted water.

During 1909, there were 831 cases and 95 deaths reported.

Raw sewage from two of the large cities was being poured directly into the river from which the water supply was procured.

The large increase in the number of cases of this disease made it clear that protection of the water supplies was necessary. The present Public Health Act was accordingly enacted this year.

In 1910, 587 cases and 151 deaths were reported. Three hundred and ninety-six cases in towns and villages and 191 in rural municipalities, largest number as usual in August, viz.: 148 i.e., a decrease of 244, but an increase of 56 deaths, in 1911, 453 cases and 162 deaths; in 1912, 548 cases and 153 deaths.

Sewage pollution of water produces those extensive epidemics, which are still of too frequent occurrence in some parts of Canada. Although in smaller towns and rural districts, with less means at their disposal, preventive measures are not all they should be, in the larger centres of Saskatchewan sewerage systems are being installed which will protect our water supplies.

While municipalities have to deal with this problem and the taking of such other measures as making privies fly-proof, etc., etc., the frequency of the spread of the disease by other means should not be forgotten. Non-water borne typhoid is a contagious disease, frequently spread by contact infection, by contamination of food and drink from the hands of patients, their nurses or carriers.

The first essential is to comply with the law and notify the case.

Full directions should be given for the necessary precautions to be taken by the rest of the household. Isolation of the patient, thorough cleansing of the hands of nurses, etc. (by thorough washing with soap and water, preferably running water, and after drying with a towel rinsing with alcohol or 10 per cent. solution of formalin). In the case of poor people, where the cook or handler of food would otherwise have to nurse the patient, removal of the patient to a hospital should be insisted upon.

Typhoid vaccine should be freely used on those exposed to infection.

The danger of spread from a convalescent case should also be remembered, materially diminished by the administration of 5 grs. urotropine three times a day for two weeks after the temperature has become normal.

In 1907, outbreaks of smallpox occurred in Regina, Saskatoon, Moose Jaw and Prince Albert as well as in many of the towns and villages principally south-east and north-west of Regina.

In the lumber camps north of Prince Albert, "In the month of January, while in Winnipeg on business connected with the Department of Immigration, I received your telegram notifying me of an outbreak of smallpox in lumber camps north of Prince Albert. On receipt of your telegram I took the first train going by the Canadian Northern. Owing to the very severe weather, and the amount of snow, I was nearly three days reaching Prince Albert. Having obtained what information I could from the R.N.W.M. Police and others, I retained the services of Dr. H. L. Reid, and, along with two mounted policemen to look after quarantine, we started for Clinch's camp.

About sixteen miles from town on the main road to the camps, we found three cases of smallpox in a stopping place kept by some half-breeds named Sanderson, alias Palm. These people were housing

and feeding freighters and others just as if there was nothing wrong about their doing so. They had an old man, whose case was quite severe, isolated somewhat by keeping him out of sight; but a woman and girl with smallpox scabs on them were in attendance upon travellers that stopped at this house.

I had this place quarantined, and a placard put on the door. This condition of affairs had existed for some weeks and, as these people had a great many freighters and travellers stopping at their place, it is easy to understand that infection from this source soon became widespread.

There were a couple of other stopping places in this immediate neighborhood, so that the quarantining of this particular place did not at all seriously inconvenience travel on this road. I was informed that there were some other families in the neighborbood affected, but as they were some distance off the main trail, and being in a hurry to get where the chief trouble was in the camp, I instructed Dr. Reid to see to those cases on his way back.

Arriving at Clinch's camp, No. 2, which is about 75 miles north of Prince Albert, we found thirteen cases of smallpox; it being Sunday, the men were all in the bunk house or sleeping quarters. Thirteen cases of smallpox among 113 men, some lying around sick with the preliminary fever, and others with the rash in different stages of development, made certainly a horrible state of affairs. All those not affected with the disease were immediately vaccinated, which I can assure you was not an easy task with such a lot of men in the cross, sulky mood they were. Arrangements were made with the camp management to send up lumber to put up buildings to isolate the sick.

There were two other camps in the immediate vicinity of about 300 men, these along with the camp first mentioned were quarantined, and instructions left to vaccinate everyone."

During this year, 1907, also severe epidemics of diptheria occured amongst Hungarians in Cupar and Rosthern district, limited outbreaks at and near Prince Albert and at Yorkton. Antitoxin was supplied free to the poor.

Nine hospitals in 1906 were in receipt of assistance under the Hospital ordinance, and this year three more were opened. There was, however, a need for isolation hospitals and hospitals for maternity cases.

1908, smallpox, 103 cases in Moose Jaw and in 24 various towns and villages.

Compulsory vaccination had to be put on the country north and south of the Soo line between Oxbow and Estevan.

Diptheria—210 cases, 54 deaths.
Scarlatina—91 cases, 5 deaths.
Measles—254 cases, 11 deaths.
Chickenpox—112 cases.

Of these scarlatina 91 cases must have been but a small proportion of the whole amongst foreigners in Fish Creek, Vonda, Aberdeen. As in some instances the presence of the disease was only discovered by information from the lumber merchants, certain persons had been in for lumber to make coffins for children that had died.

It might here be mentioned that as scarlatina and diphtheria are spread chiefly by contact infection, and that again mostly from "missed cases" and healthy carriers, medical inspection of schools would do much to eliminate these.

Teachers should be instructed as to symptoms and signs of these diseases, pointing out the danger from infected saliva; necessity for abolition of the common drinking cup and the roller towel.

1909.

Smallpox—None reported, no deaths.
Diphtheria—210 cases, 31 deaths.
Measles—226 cases, 11 deaths.
Whooping cough—27 deaths.
Tubercular disease—159 deaths.

1910.

Smallpox outbreaks in 10 rural districts—17 cases, no deaths.

Diphtheria—143 cases, 28 deaths, a considerable decrease compared with previous years.

Measles—424 cases, 19 deaths.
Whooping cough—24 deaths.
Tuberculosis—35 cases, 125 deaths.

Non-notification and indifference to notification is most apparent in connection with this disease, when it is estimated that there are five to ten active cases for every death of tuberculosis.

In 1911, by an order-in-Council, all the organized municipalities, including towns and villages, were created Health Districts, and their councils to be Boards of Health, each to have a Local Health Officer.

Most of the Local Health Officers were not appointed until January or February, 1912. It is to be hoped, therefore, that the notification figures for 1913 and succeeding years hitherto hopelessly inaccurate, will be something approaching accuracy. Every effort has been made by the bureau to make reporting as easy as possible by supplying forms, etc., and short of prosecution to obtain correct records. We are, however, still repeatedly in receipt of unofficial reports from laymen of serious outbreaks of disease, when officially they apparently would never have been heard of.

Previously also no reports were received from local councils as to the state of health of their districts or of any sanitary measures undertaken by them.

Deaths.

	1906.	1907.
Typhoid	120	54
Smallpox	0	0
Scarlatina	21	12
Diphtheria	52	55
Measles	12	6
Whooping cough	20	18
Tubercular disease	73	97
Cerebro spinal meningitis	5	6

compared with:

	1911.	1912
Typhoid	162	153
Smallpox	0	1
Scarlatina	57	58
Diphtheria	58	49
Measles	16	50
Whooping cough	31	64
Tubercular disease	184	202
Cerebro spinal meningitis	12	34

tion, etc., the population of the Province has more than doubled itself since 1906.

The work of the Bureau of Public Health has been divided into sections, and an effort made to place an expert in charge of each section. The appointment of a consulting sanitary engineer as well as a resident engineer ensures the carrying out of that part of the Act regarding the supervision and approval of plans for sewage disposal and water works. A physician in charge of infectious disease work and a sanitary inspector have also been appointed.

To deal with tuberculosis, four years ago an educational campaign was inaugurated, in which I received most valuable assistance from Dr. Geo. D. Porter, the very able Secretary of the Canadian Association for the Prevention of Tuberculosis. Dr. Porter spent a couple of months here with me, during which we addressed meetings in practically every portion of the Province. These meetings have been the means of creating an in-

Notifications for each disease for

	1911.	1912.
Typhoid	453 (162)	548 (153)
Smallpox	125 (0)	327 (1)
Scarlatina	474 (57)	561 (58)
Diphtheria	287 (58)	402 (49)
Measles	412 (16)	1188 (50)
Chickenpox	74	111
Whooping cough	33 (31)	153 (64)
Mumps	66	257
Tubercular diseases	68 (184)	54 (202)
Anterior poliomyelitis	3	18
Cerebro spinal meningitis	(12)	7 (34)
Trachoma	15	27
Erysipelas	(9)	10 (11)
Syphilis		1 (2)

The corresponding deaths in brackets.

For 1911 and 1912 a comparison of the mortality statistics, which are the more reliable data to go upon, directly on the incidence and severity of epidemics and indirectly of the prevalence of the chief epidmeic diseases, shows gratifying results when one considers that by immigra-

terest in anti-tuberculosis work, and of raising a considerable sum of money by subscriptions, etc.

A provincial anti-tuberculosis league has been incorporated by the Legislature to take full charge. A Medical Superintendent has been engaged, who is paid

to devote his whole time to the work. Two men are at work securing subscriptions in aid of the Sanatorium Building fund. Liberal assistance has been promised by the Government which ensures the erection of the buildings and the success of the work. A site consisting of 220 acres of land has been purchased and paid for. Plans for a complete institution, to cost between three and four hundred thousand dollars, have been prepared and passed, and the contract let for the first part of the buildings to cost about $175,000.

It is interesting to note that the Saskatchewan Government, through the Bureau of Public Health, are taking measures to conserve the purity of provincial waterways.

The Bureau of Public Health has continued to impress on all municipalities the grave lesson to be learned from the lack of foresight of older communities, and our towns and cities have been quick to realize that a system of sewerage is not a convenience, but a sanitary necessity, and that the very object aimed at in its installation, namely, the protection of the Public Health, may be defeated if some efficient treatment is not provided to render the effluent incapable of supporting the germs of disease.

As a result of this policy there are at present eight sewage disposal plants in operation in Saskatchewan. In seven of these installations, the sewage is treated by biological filtration in addition to sedimentation, and a filter is being added to the remaining plant this year. Further, plans for ten additional sewage disposal installations for various towns have been submitted to the Bureau, and these works should be in commission before the end of the year. This means, that at the close of the present year, the sewage from all the cities and thirteen towns in the Province, representing about one-third of the total population, will be rendered practically harmless before being discharged into our watercourses.

When it is considered that in 1912 there were only five sewage disposal plants in operation, capable of treating sewage from a population of 16,500, it must be evident that municipalities are co-operating with the Bureau of Health in the improvement of the condition of provincial waterways.

Systematic supervision and inspection is made of the existing sewage disposal works by the engineering officials of the Bureau, and suggestions offered, which are calculated to give a higher standard of efficiency in each new installation. The Bureau of Health has, up to the present, concentrated its efforts on the prevention of stream pollution by municipalities, but now that the towns and villages are alive to the consequence of neglect in matters of sewage treatment, it is the intention of the officials to direct their energies toward the large section of the population who, individually rather than collectively, contaminate surface water supplies. There are numerous settlements, camps and villages along our streams and creeks, which have no system of disposing of the sewage but simply use the nearest watercourse as a common sewer. Such streams are subject to direct pollution from fecal matter entering the water from isolated camps or houses and are capable of carrying disease through the large area of the Province which they traverse. The possibility of some such direct pollution being present in a river, which is supplying unfiltered water to one of our larger towns, is only one instance of the vigilant guard which must be kept over our streams. With this in view, a sanitary survey of the waterways has been started, which will include a thorough and exhaustive inspection of the various watercourses throughout the Province.

The importance of sanitation as a leading factor and as a basis of public health work, is not forgotten, as we are of opinion that to get to the root of the problems which exist is the only way to solve them. We have our problems. With the migration to the Province of people from the older centres of civilization, where sanitary measures have for years been practised, it might be thought that advanced ideas of hygienic conditions would be introduced, but it is not so. The creation of domestic and business wastes is just as dangerous and requires as much attention here as elsewhere, nay, even more so, because the sense of freedom from restraint which is felt in a new and

virgin country seems to lead to a careless indifference in matters pertaining to healthy living.

Many of the problems are the same as have troubled older countries for generations, and yet we are only endeavoring to cope with them. All health students know that the effete organic waste products are the chief source of danger to health and life, and that the first principle of sanitation is to find and employ means for the safe disposal of such wastes.

In this work we use practical methods of inspection by competent men of experience, who meet with local health authorities and their officers, pointing out the dangers from deposits carelessly made and wrongfully allowed to accumulate. We meet with and advise health boards on the best mode of applying remedial measures on many different sources of nuisance.

One instance might suffice to illustrate. The common backyard privy, with the omnipresent vexed question of contents removal, is one of great trouble and annoyance. So careless are individuals and councils in constructing, locating and cleaning of these, that legislation is being sought to compel the adoption of closets and receptacles of a uniform standard and system, and by this means it is hoped to reduce to a minimum a nuisance which we have reason to know is responsible for much disease.

On all the matters which have been governed by regulation, we supplement the written rules by visits to places from which complaints are received, where practical enquiry or inspection is made in company with some local official, and a remedy or abatement suggested or ordered.

Conferences with members of health boards and councils are arranged to talk over conditions and devise means for effective improvements. Public meetings are held at which Bureau officials demonstrate by diagram, lantern and experiment some of the simple methods of prevention which the ordinary householder can employ to the preservation of family and neighborhood health.

These educative meetings are much appreciated and have proved of value in awakening in the people a greater carefulness in the disposal of household wastes; better protection of milk in the home; improvement in means of ventilation; care and feeding of babies, and general cleanliness of persons and premises.

Another means of education employed is that of getting school teachers to give short lessons to their pupils on simple preventive precautions in many subjects.

Quarterly bulletins are prepared and sent to all teachers on some subject suitable with the season, and much good should accrue from this tuition.

In pursuing public health work many problems of a social character are met with and brought to the notice of those whose duty is the proposing of legislation for the physical and moral well-being of the people.

We appreciate and utilize all means of co-operation in furthering the promotion of public health work.

The Public Health Act of Saskatchewan.

Does not differ materially from those of the other and older Provinces in so far as the interpretation, powers and duties and its general provisions are concerned.

The most important feature of difference is in the manner of administration, which in this case is in the hands of a Commissioner instead of a Board.

We consider this an advantage in many ways and much superior to the usual Board method.

But, does it differ? In some of the recently remodelled Health Acts, we find the Chief Officer of Health is the executive officer, with power to perform duties such as are imposed on Boards.

Administration as provided for in this Act, is not as many imagine, autocratic, but is restricted by law to the exercise of the rights and powers stipulated.

Executive functions to be effective must be promptly applied, and with this form of administrative authority we are convinced the public's interest is best served.

A Council of Public Health considers and reviews all orders, rules and regulations made under the provisions of the Act, and may report to the Minister in charge with suggestions and recommendations as to the amendments or cancella-

tion of any order, rule or regulation or for the making and issuing of any new ones.

Perhaps the greatest advantage is that the Commissioner is in much closer touch with the Minister and Executive of the Government. In this way regulations or amendments can be more speedily considered and approved, and this often means much to individuals and local health boards.

Regulations are made by "Orders-in-Council," and have the same force of law as the Act itself.

Among the regulations in force are the following: Infectious diseases; hospitals; nuisances; hotels; dairies; tenement houses; plumbing; camps; health districts, besides many others affecting the working of the Bureau.

The decrease in the number of reported cases of typhoid fever in the Province, from 831 in 1909 to 548 during 1912, shows that we are making some progress in the sanitary condition of the Province. This is even more real than these figures indicate, for the reason that the population of the Province has increased from 257,000 in 1905, in 1911 492,432, to nearly 600,000 in 1912, and, secondly, the reporting of typhoid fever is showing a gradual improvement.

We must not, however, forget that the amount of typhoid fever in this Province is still much greater than it should be, and I hope for a continued lessening in the amount of this disease.

OBSCURED VISION.

Intolerance.

Diagnosis—

Intolerance—putting one's mind in blinkers.—Anon.

Remedy—

But who is there, almost, that is ever brought fairly to examine his own principles, and see if there are such as will bear the trial? Yet this should be one of the first things everyone should set about, and be scrupulous in who would rightly conduct his understanding in the search of truth and knowledge.—Locke.

WAR AGAINST INFANTILE MORTALITY

By J. A. BAUDOUIN, M.D., D.P.H., M.O.H.,

City of Lachine

Secretary Annual Convention of the Sanitary Services, Province of Quebec

Read before the Fifth Annual Convention of the Sanitary Services of the Province of Quebec, Montreal.

THE study of infantile mortality is one of the most important questions put before the members of this convention; it is of national import. We cannot then lay too much stress on the absolute necessity of applying to that problem a practical solution founded on positive scientific principles; because only indisputable as well as undisputed truths can help us in appreciating the relative value of the many factors which contribute in causing infantile mortality.

Statistics and science both stand for the following axioms:

1. The rate of infantile mortality is excessive in all countries.

2. Infantile mortality is higher in summer than in winter.

3. Infantile mortality is higher in the cities than in the country.

4. Infantile mortality is higher amidst the poor than amongst the rich.

5. Infantile mortality is mostly caused by gastro-intestinal troubles.

6. Infantile mortality increases in proportion with the method of feeding adopted, breast-feeding, mixed feeding or bottle-feeding.

7. The superiority of breast-feeding is overwhelming.

These facts permit us to maintain the important role played by feeding as an etiologic factor of gastro-enteritis. The bad quality of milk as the main cause of infantile mortality is already admitted by the authorities on the question.

If we study the problem more intimately, we can draw more conclusive deductions:

1. Gastro-enteritis is a toxic infection. Its specific germ is not isolated. It seems more probable that it is due to an association of many microbes.

2. Milk is an excellent culture medium for nearly all microbes.

3. The sources of contamination of milk are: (a) intra-mammary (mostly the lactiferous ducts of the teats); (b) milking process (manure, teats, hands, dust, flies, etc.); (c) can and utensils; (d) conveying and delivery; (e) home of the consumer.

4. The multiplication of bacteria in milk arises from three factors: (a) the temperature of the milk; (b) the age of the milk; (c) the species and the number of bacteria introduced in the milk. Those factors can be found at the farmer's, the milkman's and the consumer's premises.

Therefore the more the causes of gastro-enteritis are connected with the contamination of the milk, the more they are important in the etiology of the disease, and the more the preservation of the milk should be the object of all preventive measures.

The causes generally admitted of infantile mortality are the following: (1) the excessive heat of summer months; (2) the unsanitary conditions and the overcrowding of tenements (3) the ignorance of mothers and the avoidance of breast-feeding.

1. Heat. The heat has a twofold effect: (a) of weakening the child, and (b) of favoring the multiplication of bacteria. But the weakening influence of heat is but secondary, because if heat by itself was the leading factor, infantile mortality would increase in the same ratio. But we have proofs of many cities having a longer and a warmer summer than our own and yet where the infantile mortality is lower than in our midst. It is because in such cities the effect of heat on the multiplication of bacteria in the milk has been controlled; there lies the key of success.

2. Unsanitary conditions of tenements. The unwholesome and overcrowded tenement is admittedly unfavorable to the nor-

mal development of the child. But we must admit that this factor acts mostly as a cause of contamination of the milk, such milk being left without any refrigeration or protection against flies, conditions most favorable to the multiplication of microbes. As an illustration we have the tenements of the Peabody Donation Fund, in London, England, which are generally overcrowded and in which the rooms are small, with an infantile mortality much lower than in the neighboring districts, the mortality being often less than 10 per 100 births, while the infantile mortality of Montreal is 32 per 100 births. The proper preventive measures would be then: (a) the education of the families occupying such tenements on the proper handling of milk, and (b) the absolute necessity of procuring them a milk of high quality. Because a milk delivered therein already contaminated becomes a real poison after being again highly contaminated in such tenements. The conclusion is the betterment of the milk supply.

3. Ignorance of mothers and putting aside of breast-feeding. We have here no doubt a very important cause of infantile mortality. Therefore, we must by all possible means, such as lectures, pamphlets, consultations and home visits remind mothers of their sacred duty of feeding their offspring. We must also educate them on the elementary principles of alimentary hygiene. In England, such education is organized through the wide distribution of pamphlets, home visits and a special teaching to young girls in the highest grades of elementary schools. In Montreal also such work is carried on unceasingly, and special lectures have been delivered to mothers in many parishes. The many milk depots already organized are a great help toward the education of the public. Pamphlets bearing on infantile hygiene are widely distributed through the agents of the Metropolitan Life Insurance Co., and the Provincial Board of Health has also published a leaflet on infantile hygiene, which is distributed by the priests and ministers at the baptism of every child. And the Child Welfare Exhibition has been visited by thousands of people. But, notwithstanding all these commendable efforts, which have been exerted, infantile mortality has this year been as high as in the previous years. Why? Because public education, which is most important, even absolutely necessary, is not sufficient. If a milk loaded with bacteria and toxins is delivered to a family, hygienic handling might prevent an increase of the contamination, but it will not neutralize the toxins already formed, which will poison the poor nursling depending on such impure milk in his struggle for life. The necessity of improving the milk supply is thus most conclusively demonstrated. It is the condition "sine qua non."

Such improvement of the milk supply has already been followed in other countries by a reduced infantile mortality. In England, and more particularly in London, the milk supply has been much improved by proper cleanliness, sterilization, cooling and rapid delivery. The mortality has consequently dropped in six years from 145 per 1,000 to 106 per 1,000. Pure milk having but a few bacteria can be produced under special conditions. The fact has been proved in Copenhagen, where milk received a distance of over 100 miles from the city will keep for over 48 hours without alteration, the conditions being asepsis followed by immediate and continued cooling. The result is that in those countries infantile mortality is very low. In Chicago milk is bottled on the farm and shipped to the city in refrigerators and within 12 hours. In New York, as well as in Rochester, the improvement of the milk supply has been followed by a reduction in infantile mortality. Whilst in those foreign countries such encouraging results are obtained, in the Province of Quebec infantile mortality has increased from 13.1 per cent. in 1902 to 17.5 per cent. in 1912.

Thus it will appear that it is most urgent for us to improve our milk supply if we wish to see a corresponding reduction of our infantile mortality.

In order to realize the desired improvement, reforms must be carried out at the farm, at the places of shipping, at the delivery points and at the consumer's home. Such reforms must cover all the admitted scientific methods necessary for the production of pure milk: asepsis, cooling, sterilization and pasteurization.

Surgery owes its astounding progress of the last few years to asepsis, which ex-

cludes microbes from the operating field. This asepsis applied to the production of milk will also produce a revolution in the present conditions of our milk supply, because it realizes the true prophylaxis of gastro-enteritis.

Cooling will prevent the multiplication of microbes, which may have gained access to the milk.

Sterilization is already used in special conditions, such as in milk depots, but it cannot be proposed as a method covering the whole supply of a city.

Pasteurization, on the contrary, offers particular advantages, which admits of its adoption.

What means have we at our disposal to enforce these methods?

1. Legislation. The necessity of legislation is admitted everywhere, and in all countries legislation exists. In the United States the pure milk commissions have established a standard for the bacteriological analysis of milk, it is the "certified" milk which shall not contain more than 30,000 bacteria per cubic centimeter .and that standard has been upheld by the courts. Nevertheless it is difficult, in the actual state of our knowledge, to state the exact number of bacteria which might be tolerated in the milk, although it is admitted that a high number of bacteria found at different analyses in the milk coming from the same producer is sufficient reason to refuse such milk and impose a penalty on whomever is responsibe therefor.

2. Inspection. The control of legislation through inspection is also a necessary measure. Such inspection greatly helps, at the same time, in giving to the farmer a most important education. But the practical results which this method will bring are slow to appear, because the education of the producer as well as the improvements to be carried out at the farms must take a long time to be realized. But a system adopted in the United States has materially hastened such progress. It consists essentially in giving the widest publicity to the results of the inspections, the farmers being then forced to adopt the proper improvements on account of the harm which follows the notoriety given to the defects found.

3. Milk depots and popular education. Milk depots well organized, under medical supervision and completed by home visits, are one of the best means available for popular education and to reduce infantile mortality. They have given already very gratifying results. But, in the opinion of William Savage, an authority on such questions. "they can answer at most but a small part of the problem and cannot in any way be substituted for the general supply of a good milk."

4. Pure milk commissions. The movement of "certified" milk as conducted by the Pure Milk Commissions of the United States has demonstrated that a milk of good quality can be commercially produced. It has been recognized also as a great factor in public education. But it can cover only a small quantity of the total milk supply of a large city, because the high price charged for a milk of such quality makes it prohibitive to the poor. The Pure Milk Commission, organized in Montreal in 1907, was working on the same lines but, unhappily, it has not lived long enough to show any appreciable results.

5. Delivery of special milk for bottle-fed babies. Such milk has the same disadvantage as the "certified" milk of the Pure Milk Commissions, for the reason that is costs more than ordinary milk. Consequently such milk can only be delivered to all nurslings, provided the municipal authorities or philanthropic organizations undertake such delivery.

6. Municipalization. The municipalization of milk supply, which has already been suggested, presents so great difficulties that it cannot be adopted.

7. Municipal laboratory. The municipal laboratory is our most perfect method of controlling the milk supply. But to obtain from this method the constant improvement of the milk supply, the widest publicity must be given to the results of the analysis. Indeed, the more the milkmen will know that the high quality of their milk is thus advertised to the public and that their trade is thereby made safe, the more will they be ready to go to the trouble of taking all precautionary measures to insure the production of a non-contaminated milk. As it is now, milkmen receive the same price irrespective of the quality of their milk. By this method, adopted by the City of Lachine, I have been able to gradually improve our milk

supply as illustrated by the following figures:

For the publication of the results of the analysis of milk, the classification proposed by the Pure Milk Commissioners has been adopted, viz.: Class A takes milks having 30,000 or less bacteria per cubic centimeter; class B, milks from 30,000 to 100,000 bacteria per c.c.; class C, over 100,000 bacteria per c.c.; class D, milk unfit for human consumption.

The first report (May, 1913), placed one-third of the milkmen in class A, one-sixth in class B; one-sixth in class C, and one-third in Class D, whereas the last analysis (September, 1913), shows that three-fifths of the milkmen are in class A, three-tenths in class B, one in class C, and one in class D.

8. Pasteurization. It is admitted that pure raw milk is superior to any modified milk. The mother indeed gives to her offspring a milk raw and unmodified by heat, and such milk is sterile.

On the other hand, the necessity of asepsis for the production of pure milk is scientifically proved. But one knows what infinite precautions and constant watchfulness are required in order to keep the milk free from contamination. And those bacteriological precepts are still more important on the farm, because microbes therein introduced in the milk have ample time to multiply and give off their toxins before such milk is delivered to the consumer.

But such asepsis, which is indispensable on account of the production of a pure milk lying at the foundation of the prophylaxis of gastro-enteritis, will not be realized before a long and systematic campaign of education is organized. However, before such education has been completed and can bear results, are we to stay defenceless with the problem of infantile mortality before us? No, most happily, we have in the treatment of milk by heat a recognized substitute. Such treatment consists in sterilization and pasteurization.

Sterilization, as we have seen, already adopted in the milk depots has produced a notable lowering of infantile mortality. But it cannot be considered when we have in view the milk supply of a whole city, because such a process completely alters the taste of the milk.

Pasteurization, on the contrary, has no such disadvantage. Milk maintained at 60 degrees C. is not changed either in its chemical components or in its taste. Neither does pasteurization destroy, as it was once thought, all the lactic bacteria which are so useful on account of their preventing the growth of other bacteria. On the other hand, pasteurization kills all the pathogenic germs.

The Eberth bacillus is killed at 60 degrees C. after five minutes; Klebs-Loeffler, 5 minutes; cholerie germ, 8 minutes; bacillus of dysentery, 10 minutes; Koch bacillus, 20 minutes.

A well organized pasteurization, followed by immediate and constant cooling, improves milk of inferior quality to the standard of a pure milk.

It is now time to answer a few objections advanced against pasteurization.

1. Pasteurization does not destroy toxins.

The pasteurization of a milk which has stood for 36 hours or more does not destroy the toxins; but pasteurization carried on at the producer's premises kills the germs which might have found access to the milk and prevents the development of further toxins.

2. Pasteurization admits of neglectful practices, because it kills the bacteria admitted in the milk through uncleanliness.

Pasteurization does not exclude the inspection of the farms to control them. Moreover it is easy to collect samples of milk before pasteurization and have them bacteriologically analysed, thus controlling the production of such milk.

3. Pasteurization might cause constitutional diseases in infants.

The constant use of sterilized milk in milk depots has proved that such fear is not founded.

4. Pasteurization does not destroy all the germs.

Raw milk of good quality also contains germs, and it is proved that bacteria in a limited number in milk do not cause gastro-enteritis. Moreover it must be understood that the whole process of pasteurization must be controlled by bacteriological analysis, because a greater number of bacteria has been found in pasteurized milk than in the same milk unpasteurized.

5. Pasteurization has to be carried on on a large scale.

A municipality or a company can provide the required plant.

Therefore we can conclude with J. L. Morse, in the Medical Record of October, 1912: "Any milk which is not of the cleanest should be pasteurized before it is given to infants."

In this respect it may be added that the experience of such a process has already been made, namely at Edmonton, where about 70% of the milk supply of the city is pasteurized.

Conclusion.

Two methods of municipal control of milk supply can be adopted.

The first method, which applies to a municipality, where the whole of the milk supply is received within 24 hours after its production, consists in: Legislation, inspection, milk depots and popular education and the municipal laboratory, with publicity given to the results of the analysis.

The second method, which has to be followed in municipalities where the whole of the milk supply is not received within 24 hours after its production, should further include the pasteurization of all milk not delivered in the city within that time or which does not answer to the standard of "certified" milk.

BRIEF MADNESS.

Anger.

Diagnosis—

He submits to be seen through a microscope, who suffers himself to be caught in a fit of passion.—Lavater.

Remedy—

Consider how much more you often suffer from your anger and grief than from those very things for which you are angry and grieved.—Marcus Aurelius.

THE PROBLEM OF ALCOHOL

By FRASER B. GURD, B.A., M.D.

A Lecture delivered during the Course for Social Workers under the auspices of the Charity Organization Society of Montreal.

As understood by me, the aim of the Social Worker is, broadly speaking, to assist the dependent portion of our population to become independent and to increase the joy of living among those who, though not dependent, are not making the best use of their lives. Of the means by which this may be accomplished, obviously, the most useful and permanently effective will be those whereby the individual who is unable, through the exercise of his mental and physical energy, to make provision for the needs of himself and family, may be so influenced that his usefulness to the community may be increased. With the subsequent improvement in his material well-being, which, no matter what may be the statements of professional agitators and others of like breed, in the vast majority of instances is directly affected by personal efficiency, his poverty is diminished or disappears.

The usefulness of the individual to the community depends upon his capacity for "doing things." The man or woman, in order that he or she may meet with material success, must be in a position to render to the community something which the community requires or wants. This "something" may be of the nature of physical labor, more or less skilled, as the case may be; it may be represented by the outcome of the activity of the brain cells and thus depend upon the accumulated knowledge (the result of education), and the mental originality of the individual; or the commodity may consist of goods or money, for the use of which society is willing to pay handsomely in interest.

From a strictly selfish point of view, therefore, it may be said that the independence of the individual is influenced by his knowledge and mental capacity, his accumulated wealth, and by his physical well being. Fortunately, it may be added, there are but few persons who do not recognize that there is something more precious in life than that which depends upon the foundation of selfish return for services rendered.

In order that the author may not appear to pose as a rank materialist, may I state at this time that the reason why, in this short paper, I do not seek to lay great stress upon the moral and spiritual nature of man, is not that I do not recognize the fact that men are consciously moral, but because I believe that the problem of alcoholism has been for too long treated as an almost exclusively moral question.

Of the various factors which influence detrimentally the moral, mental and physical well-being of the individual and dissipate his capital, there is none of greater, if so be of such great importance, as that which depends upon the non-medicinal use of the falsely named alcoholic stimulants.

The causes of dependency in Montreal may be classified in the following order:

1. Sickness (chief among which are tuberculosis, syphilis and alcoholic degenerations).
2. Alcoholism per se.
3. Unemployment (due largely to physical incapacity, ignorance, alcoholism, feeble-mindedness).
4. Desertion (of which the chief cause is alcoholism and its subsequent moral degradation, leading as it does to sexual perversion).

The total population of any community may be divided into certain groups, depending upon their relationship to the drug alcohol. Upon this basis can be classified:

1. Total abstainers.
2. Occasional users.
3. Occasional drunkards.
4. Chronic alcoholics.

5. Chronic drunkards.

The largest individual group is that composed of the total abstainers, comprising, as it does, practically all children under fifteen, the majority in all probability, of the women, and a goodly proportion of the men. With this group we have nothing to do save to state that if the attitude of many of the more active total abstainers towards others was rather that of sympathy than of condemnation their usefulness would probably be enhanced. If the abstainer would devote more of his energies to demonstrating to them that as a result of his freedom from the inhibiting action of the drug he is a physically fitter and mentally more alert individual, and consequently a happier man and more useful citizen, rather than a "morally" better man, his example would be more beneficial.

The second group is composed of that large class of persons who occasionally indulge in a glass of beer or wine when with a friend who desires to drink, who at other times do not think of indulging in what the majority of them recognize to be an expensive and more or less injurious drug. Were it not that the drug possesses certain actions, which upon certain occasions are undoubtedly extremely pleasant—albeit transient and ephemeral—and that the occasional user cannot but realize the potency of the drug in inhibiting his appreciation of unpleasant thoughts, etc., and were not the drug so easy of access that the likelihood of the occasional beer or wine drinker becoming either a chronic habitue or an occasional drunkard is great, such a use of the drug would not be of greater importance than the occasional use of bromides or other mild narcotics.

In an introduction to the study of the social problems arising from the consumption of alcohol by such large percentages of our population, we shall consider for a few moments the physiological action of the drug which claims so many devotees. One authority describes the action of alcohol as a cumulative production of paralysis of various parts of the nervous system. Alcohol is not a stimulant, but, as indicated in this description, is a depressant and a narcotic. This fact has been amply proven by laboratory experiments and practical experience. Its action is directed first and chiefly against the higher centres, so that the normal individual who has taken a moderate dose of the drug at once feels less affected by untoward environmental conditions and loses, to a certain degree, his power of judgment, which loss very frequently assists the feeling of general well being. As a result there develops that state of serenity, self-complacency and absence of diffidence which is characterized as a rule by an appearance of good-fellowship, enthusiastic manner of speech and vivacious though not brilliant conversation.

It is because alcohol as a drug is potent to induce this abnormal and unjustified feeling of well being that the employment of alcoholic liquors has obtained such great popularity amongst so-called civilized and aboriginal people alike. Other factors in addition to the direct action of the drug itself, which assist it in maintaining its popularity, are those arising out of the fact that it is usually contained in beverages which are in themselves extremely palatable, and because the surroundings in those places in which alcoholic liquors are commonly served, are as a rule enticingly attractive. Furthermore, there has developed, particularly in Anglo-Saxon and Teutonic countries, a feeling that the drinking of alcoholic mixtures signifies a well developed manly individual.

The foregoing are the reasons, in the author's opinion, why the occasional drinker is led to indulge in his liquors and to become an occasional drunkard.

Here then, the first problem presents itself, namely, in devising and carrying out means whereby the ordinary man, lacking as he generally does sufficient ambition and will force to control his desires for even temporary pleasures, may be spared the introduction to the drug, or at least sufficient familiarity therewith to permit him to learn its potency for pleasure. Among the influences which may be expected to prevent the development of the habit of occasional drinking are: (1) A change in public opinion with regard to the propriety of drinking alcoholics. This, in my opinion, will be done by church and other religious influences and a general campaign of education with re-

gard to the harm devolving upon the individual and the community as the result of alcoholic indulgence.

(2) The supplying of places of recreation and assembly in which men and women may congregate and indulge in healthy amusements or stimulating talks as man to man. In this respect may I be permitted to suggest that more good would be accomplished in the present crusade against intemperance if the use of tobacco were not referred to as if it were of equal importance to that of alcohol. Tobacco smoking is undoubtedly unnecessary and is mildly injurious to health; it does not, however, lead to any degradation of the individual and suffering and destitution of those about him in anyway comparable to alcohol. And for this reason, I believe, the inhibition of alcoholic drinking is not affected so favorably when tobacco and alcohol are joined together. Tobacco does, moreover, take to a considerable degree the place, as a means of stimulating social intercourse, of alcohol and as such may be employed by the temperance worker.

(3) A third desideratum to assist in displacing alcoholics, is the popularization of other and less harmful beverages. This has been accomplished to a great extent on this continent by the soda fountain, and I think I may say more particularly by those drinks which contain caffeine. I do not wish to be interpreted as advocating the turning of the members of our community into caffeine habitues, but I do believe that to a very great degree the false feeling of stimulation which accompanies the use of alcohol can be replaced by the true stimulation of the caffeine group of drugs.

In the foregoing section we have dealt with what may be termed the occasional drinker, and the occasional drunkard; there remains for us to consider the chronic drinker and the chronic drunkard. Of these two classes it is difficult to decide which is the more objectionable, from a social point of view. In order that we may understand exactly the basis upon which these groups are separated from one another, and from the occasional drunkard, it is necessary that each be defined. By a chronic drinker, or more particularly a chronic alcoholic—I mean the individual who habitually consumes a considerable quantity of alcohol daily, but who does not drug himself into that state popularly known as "intoxication." By the term "chronic drunkard" is designated a person who habitually, either periodically or whenever the means are afforded, indulges in the use of alcoholics to the state of more or less complete inebriety. Such indulgences commonly take the form of a protracted drinking bout or spree.

From the sleep which follows any alcoholic debauch the drunkard awakes, oppressed with a throbbing heart, violent headache and feeling exhausted, sick and giddy. These primary pains and discomforts are quickly and readily removed by repetition of the drug, and therein lies the first great difficulty for the chronic drunkard in breaking himself from his evil habit. It is difficult for the ordinary individual to imagine the tragic suffering experienced by the chronic alcoholic when deprived of his drug, or by the drunkard when he first comes from under the influence of his spree.

The metabolic processes of the alcoholic's tissues are altered to such a degree that the whole equilibrium of the body functions, particularly in so far as these refer to the nervous and digestive systems, is rapidly and terribly upset so that even a few hours abstinence from the drug in habitues suffices to turn the more or less normal individual into a raving maniac or to render him a victim of the terrible and horrifying hallucinations which characterize the so-called delirium tremens.

Certain facts must be realized in our efforts to help the chronic alcoholic or the individual recovering from his spree, if we are to meet with success. First, it must be appreciated that such individuals cannot cease the habitual use of alcohol without adequate pharmacological hygienic and dietetic help; in other words they are suffering from a pathologic metabolism, and as such must be treated as sick patients, and not as vicious individuals. Secondly, it is of the utmost importance that the patient's confidence be obtained, and that he or she

should be willing to give up the pleasures or loss of sensibility that alcohol affords them.

As a rule the chronic alcoholic is more easily dealt with than a chronic or frequent drunkard, since to them the drug is more of a necessity than a pleasure. The majority of chronic alcoholics realize full well the harm done them by the drug as well as the drain upon their natural resources consequent upon their employment of the drug. Nevertheless, but few are willing without considerable persuasion to face the suffering which they know follows forced abstinence. By means, however, of kindly and pointed advice, it is often, at least, possible to induce such individuals to undertake treatment.

One of the chief features which influence the formation and continuation of chronic alcoholic habits is the widespread though mistaken idea that alcohol is a food, and that alcoholic beverages form a useful, even essential, constituent of the dietary. This point of view is particularly general among the working classes of the British Isles, and is therefore a very important problem for us in Canada, since we receive such a large number of immigrants from Britain. Whether alcohol be allowed any net food value at all is questionable, that it is not an economical food is certain.

As a result both of the mistaken idea with regard to the food value of alcoholic liquors and the insidious pleasantness of alcoholic drinking, we find that among the artisan, mechanic and laboring classes a very large percentage of the total wages earned are spent upon liquor. It is the rule, rather than the exception, to find among individuals of this group that from ten to forty per cent. of their earnings are dissipated upon beer, ales and spirits. That the foregoing does not overestimate the facts is shown by official figures from the British Isles and the United States, in which it is stated that the average yearly expenditure per individual is about $20. Taking the hypothetical family of five as a basis, this gives an average yearly expenditure per male wage earner as one hundred dollars. Inasmuch, however, as relatively little alcohol is consumed by what are commonly called the middle classes, the average per family among the wealthy and poorer classes is, obviously, in excess of this amount.

Among the wealthy classes alcoholic drinking does much harm, but the injury produced in this instance is not comparable in its importance to that resulting from the wasteful expenditure among those who should exercise economy in every part of their budget, in order that they may be able to withstand the occasional periods of sickness and unemployment and to add to their resources by the purchase of useful luxuries or investments. In the author's opinion no one aspect of the problem of alcohol is of so great importance to the community as that which arises out of the habitual discounting of the pay envelope to meet the desire for liquor.

Among the means at our disposal for directly decreasing drinking habits I would place religious and educational propaganda in the first place. Such education should be, primarily, along broad general lines, in order that the individual's ambition and capacity for procuring useful and healthy pastimes, interests and amusements, may be increased. Secondly, and more specifically for our present purposes, education should teach the direct harm done the individual and thus the community through the physical, mental and moral degradation which accompanies the consumption of alcohol. Lastly, but by no means least, humanity's selfishness should be appealed to by indicating the increased earning capacity and capital building which accompanies the habit of total abstinence.

By the Social Worker much good can be and is being done by the institution of settlement houses, athletic, literary and other clubs, etc., which act as substitutes for the saloon as meeting places for both men and women.

On the part of the State thoughtful and conscientiously enforced laws must undoubtedly accomplish much. A rapid and striking alteration in the drinking habits of the community cannot, however, be expected to follow prohibition laws. The chronic alcoholic craves his liquor in a most intense and imperative fashion, so that absolute prohibition can scarcely be expected to be effective unless means are

adopted whereby he will be able to receive adequate care. The thoughtful control of the liquor traffic, more particularly, in my opinion, in the eradication of the saloon and in higher taxation, will do much to diminish the number of alcoholics in the next twenty years. Once the chronic alcoholic has been eliminated absolute prohibition will be not only feasible but comparatively easy of application.

In addition to legislative efforts to control the liquor traffic the necessity for institutions or hospitals supported by state funds for the care of cases of acute alcoholic mania and delirium tremens is pressing. At the present time there is no place but the jail in which such persons may be placed unless complicating injury or disease renders them fit patients for our general hospitals. There exists, however, in this Province, no public institution into which chronic alcoholics may be admitted in order that they may receive the care necessary to permit them to become freed of their habit.

Since a very considerable number of chronic drunkards are degenerate and chronically shiftless, it should be possible for our courts to commit such persons to properly organized and superintended institutions, in which attempts at cure must be exercised and the proceeds from their forced labor applied to the support of their wives and families.

In conclusion, let me repeat that the problem of alcoholism is a real problem, and as such is capable of being solved. The solution, however, requires earnest study, and above all, I believe, a sympathetic attitude towards the alcoholic himself.

EGO-MANIA.

Conceit.

Diagnosis—

This silly disposition comes of a mixture of ignorance, confidence, and pride.—Penn.

Remedy—

The corn bends itself downward when its ears are filled, but when the heads of the conceited are filled with adulation they lift them up only the higher.—Horace Smith.

TUBERCULOSIS A BUSINESS PROPOSITION

By A. P. REID, M.D.

Provincial Officer of Health, Province of Nova Scotia

THE medical or therapeutic treatment of this disease is settled and need not claim consideration here.

The sanatorium system of handling it was deemed the correct one, but experience and observation have taught me that it is not and cannot be a success (for details I would refer to the Public Health Journal of July, 1911).

As a hospital or for treatment of individual patients, it fills the bill, but to handle tuberculosis, it must fail, as it cannot reach the roots of, and eradicate that plant of ill omen—the tubercle bacillus. As it is generally managed, a certain protection or immunity is given the tubercle bacillus by removing its victims, while allowing it to entangle new ones in its folds. Even of those relieved, too many fall after discharge from the sanatorium, because it was placed in a position it could not fill, and should be relegated to a substation; besides, it can only handle one case for a hundred that need help.

What do we want to achieve?

1st—To prevent spread of tuberculosis—to exterminate it. 2nd—To secure its victims when all are curable—in fact, before they are aware of their condition—90 per cent. now (as disclosed by post-mortem examinations), have had it, got well and died from other causes, without having been aware they had tuberculosis. 3rd—To care for advanced cases and derelicts. 4th—To enable the afflicted to aid in their own support, assisted, if need be.

This is what we are up against, and let us look at it from a business point of view. The cause of it all is a minute entity that harbors in our homes, houses, offices, work-shops, schools, and where people congregate, while multiplying in the bodies of their victims, who are generally unaware of it until a later stage, that may be too late for relief.

Our business is to eliminate this entity, while in the meantime caring for its victims.

We must attack the above citadels of its repose by rendering them sanitary on systematic, not desultory lines. Curing the afflicted is a secondary and too often futile effort.

1st Proposition.—Make the citadels sanitary—every house a sanatorium.

If we can catch them early enough, all can be cured, without much interfering with their usual avocations.

2nd Proposition.—We must secure those who may lapse by anticipating its probability—and thus prevent their fall.

The advanced cases and derelicts demand special care. Many can be cured and all more or less relieved and life prolonged—even the fatal cases relieved of much of their misery.

3rd Proposition.—The majority can be cared for in their own homes, if under supervision and needed help, and but few should need the hospital or sanatorium.

Make every house and disease focus sanitary, and the question is solved. This will entail cost in money and brains, but is quite within our powers if we make proper use of our present knowledge and experience.

As it is now, patients returned relieved from the sanatorium too often relapse and die, who might continue relieved and be finally cured, if sanatorial care could be furnished or afforded. Hence every house should be a sanatorium, and no other one be needed. The poorer the house it may the more easily be made sanitary—for the ideal is an open tent. The modern mansion is the most difficult problem to solve.

The above suggestions appear to be very trite and simple—platitudes—but in the concrete, what can be done with fair prospects of success?

Education.

We must expend 90 per cent. of our efforts on these lines.

Every house, etc., should be sanitary, and that they are not so is due to ignor-

ance—prejudice—hebetude, and sometimes poverty. Lectures, literature, etc., should suffice, but they have failed, and wil fail, owing to that law of human nature, which looks on advice (if it be irksome), as good for the other fellow. We must directly and persistently (not forcibly) present the facts to the delinquent and keep this up, until faults are remedied, and if poverty intervenes, then furnish the needed aid in kind, or as may be deemed best.

This assumes that a public health official, nurse, or inspector, have charge of a district under the medical health officer to which they devote all their time—in a tactful way, to keep on the track of delinquents, and follow them until they complied with regulations. In many cases I think a woman would be preferable to a man for this duty. All they need is "common knowledge, common sense," and tact, to carry out the instructions of the medical health officer to whom they regularly report. This health officer is to be responsible for the correct performance of their duty, and to follow up their reports, to see that requirements are carried out.

In their visits the inspectors would note any indications of ill-health or debility, though no complaint be made, report all such cases to health officer, and carry out his instructions. In this way we could secure the incipient cases of tuberculosis at the curable stage, and (if excused), I would remark that in no other way can this be done. Diagnosis may be difficult, mayhaps impossible, but this is not a matter of moment, because at this stage what cures one will not cure another. In this way we could entrap not only tuberculosis, but any other infectious or serious malady when it could be most readily handled.

The inspectors would also see that the sick from any cause were properly cared for, as well as patients returned from a sanatorium. They could directly teach, explain and demonstrate, and ensure the sanitary state of the home and surroundings while teaching patients how they need not be a source of danger to others.

My sympathy goes out to the poor dying consumptive who, with all the care a hospital or sanatorium can give, still longs for the home and the company of family and friends—though a dangerous inmate of any house, yet by adopting simple necessary precautions this danger can be so minimized, that there need not be objection to the stay at home. In this way we may have the solution of all the propositions above referred to.

In adopting this system, money is needed to pay officials and to supply the want due to poverty, as it may arise, but of even more moment, the control and responsibility should be under the Government. My experience of municipal control has been unsatisfactory from many causes, as well as the desire to curtail expense.

A sanatorium may be a convenience for the few it can accommodate, but is by no means a necessity—for without any reasonable doubt, people can get well at their own homes with intelligent supervision (that need not be so very costly), as well, if not better, than at the institution—with their friends around them, and if able to work, can in so far contribute to their own support.

As system is needed, I would suggest the working out of details be referred to a representative commission of business men and others, that would not exclude "the man in overalls," or the "man in the street"; all are equally interested. I have only very briefly sketched general outlines, and it may be noted that the cost may be limited, owing to the area that is taken in hand which could be a guide to extension.

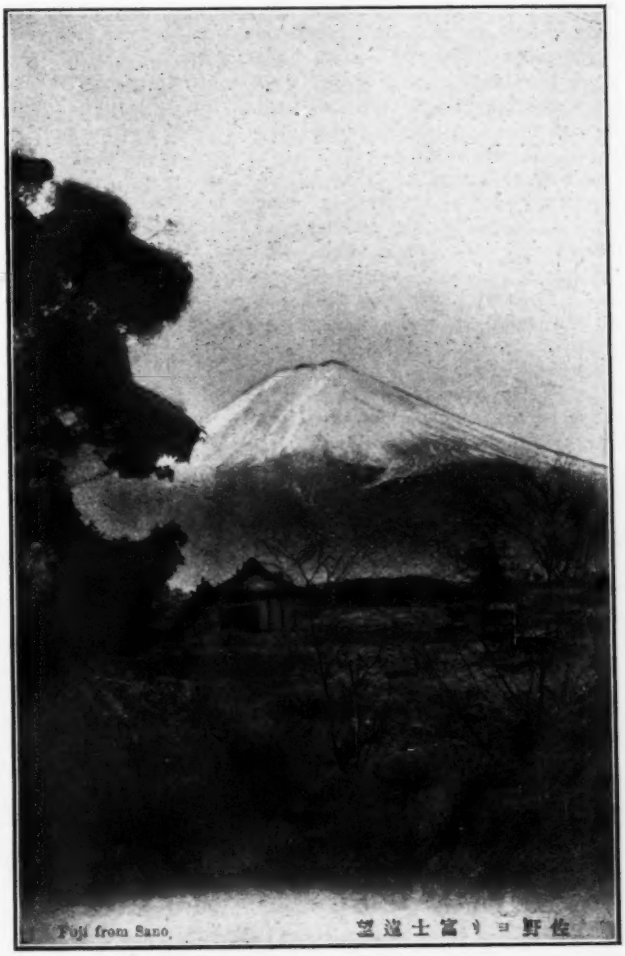
Our watchword should be education, demonstration and careful supervision at the homes, with needed aid to those in want. One dollar spent in this way would go farther and be more efficient than ten dollars in running large caravansaries that people for many and good reasons will only enter on compulsion in some form, and to the great mass of the afflicted are, and can not be available for reasons I have not time and space here and now to specify.

Much money has been wasted by our inefficient system. We begin at the wrong end. Like the inexpert trying to stop the leak in the dam by working on the outside instead of the inside, with but very temporary benefit.

CHRONICLES "EN ROUTE"

FIRST GLIMPSES OF JAPAN

By FLORENCE WITHROW, B.A.



Fuji from Sano. 佐野ヨリ富士遠望

A PRETTY custom prevails in Honolulu, which we failed to mention in our previous paper. Every citizen of the islands, when leaving on a journey, is bedecked by friends with lovely chaplets of flowers. These beautiful posey chains, called *leis*, are hung about the neck. Many ladies and children, and indeed gentlemen too, were almost smothered with them. Bright paper garlands are also added. One wee Japanese laddie, five years old, carried on his sturdy young shoulders at least a

dozen chains. He was as proud as punch and the cutest sight, of course everyone wanted to "snap" him. A gracious compliment was paid our small party by Mr. and Mrs. Rutter, of Toronto, who gracefully decorated us each with a lovely violet wreath, with the appropriate Hawiian farewell phrase.

We must describe the eleven days' voyage to Yokohama as absolutely perfect. More ideal ocean conditions do not exist anywhere. We traversed the Sun Belt route within and just above the tropics. The air was balmy, the sun bright, even too hot, the sky and sea intensely blue. The Pacific did not belie its name. If anything the ocean was too smooth. As a sure proof, practically, no one missed a meal the entire trip. Deck games, swimming, tango teas, evening deck dances, with "oceans" of "dolce far niente," was the order of each day. The ship's officers looked "irresistible" in spotless white duck uniforms. Susceptible maidens wore the prettiest white and delicately tinted suits or summer frocks. The gentlemen showed evidences of as great vanity as the "weaker sex" in their purple, green, and yellow socks with ties and handkerchiefs to match.

The ship's company of the Mongolia offered a unique entertainment to celebrate the crossing of the 180th meridian and to initiate those of the crew or officers who had never crossed this mystic line. By a coincidence Sunday was the day dropped. The day following Saturday was Monday, though some seemed to think the Sabbath was being desecrated by this hilarious and novel exhibition. Father Neptune, with trident and crown, accompanied by Miss Neptune, each robed in yards of frayed rope and bedecked with gorgeous paper flowers, ascended the dais (covered hatchway), and seated themselves on thrones (the best wicker deck chairs). Around them were their ministers and courtiers in costumes—and without—that were surely never made for land or sea.

Then began the mysterious rites of initiation. Three candidates were presented, decent and cleanly youths, one the handsome young wireless operator in white trousers and spotless shirt. Alas! had he only known, only had the slightest hint, overalls he would have worn. For the young innocents were simply spattered and daubed with lamp black and engine grease from head to foot. Even their hair was shampooed with a lather deadlier than soap; tar and feathering would be a slipshod initiation in comparison with these slick touches. One fellow attired like a South Sea Islander, tatooed with varied colored paints and acting like the deil himself, gloated over each victim and daubed him well, then shaved him down with a three foot razor. The doctor dosed each with soap pills, then applied a stomach pump, to which a garden hose would appear insignificant. Finally the "applicant," duly prepared, was dumped, head over heels into the swimming tank. Later emerged a sorry looking fright, but a properly initiated hero.

Yokohama's harbour showed at once that we were in foreign waters, sampans, and curious craft of all kinds, with strange looking sails, appeared in hundreds. The sails, like other things Japanese, are exceedingly picturesque in outline and are variously ribbed.

As this hasty sketch is simply giving impressions we must begin with the first thing noticed—the queer-looking jinrikisha. Probably there were one hundred in rows on the stone quay, accompanying each was a smiling little brown man, who bowed, bobbed and beckoned with true Oriental zeal. We almost believed we must be divided into "parts" among the dozen who clamored for our particular corpses. However, we managed to keep intact and climbed with our own arms and legs into the funny little vehicles. To say that they look like the old fashioned perambulator and that one feels like a laughing, cooing baby is no exaggeration. These were so precisely our feelings that some took quite naturally to "Da-da! woo-woo!" When the little brown men began running, each behind the other, the procession looked exactly like a string of ostriches, bobbing bushy bodies on long legs.

The rikisha is the invention of an American missionary who once trundled his invalid wife in a discarded baby carriage. Its name signifies "man-power-wheel" or pull-man car, as some one wittily derived it. It is especially well adapted to the light weight Japanese, who use it nationally. Every village, even, has a superfluous number. Formerly they had wooden spokes,

but now nearly all are of steel with hard rubber tires, excellent springs afford all the bobbing one desires. A neat mat, comfortable cushion, and a rug or shawl accompany each vehicle, with an ample waterproof hood and fore cushion. When firmly buckled in one could almost withstand a deluge. For such a shower, the riki man would don a cape of grass or straw. His mushroom hat of canvas or basket-weave is the most sensible thing in the kingdom. It protects from sun, sheds rain, and prevents the head from a knock if the wearer is struck by the sudden stopping of the buggy in front. Indeed the riki men seem to help one another up hill, if there is no push man behind, by bunting their head against the carriage in front, after the fashion of an offended nanny goat, but not with the same disastrous result. Rikisha men may be called human ponies, but they, by no means, resemble donkeys.

We loved the little bobbing men for many reasons. They appear always smiling, even grinning, and, so far as we found, invariably good-natured. Their dress is neat and clean. We have yet to see an untidy or ragged one. Navy blue cotton cloth is mostly used. The trousers fit closely and are often knitted tights; over the shirt is a kimono jacket. Sometimes a fancy pattern makes the little pull-man look like a strange variety of serpent or fish. Their sandaled feet are wonderfully fleet, tripping over surprisingly clear roads even in the busiest sections of the cities.

In geometric and other designs the Japanese are famous. Even the Imperial crests are geometric or conventionalized flowers. The poorest artisan or peasant has some border or central pattern on his cotton smock, often representing his trade. The beggar wears fancy printed garments. The poor women coaling the ship have a pretty white and blue handkerchief of artistic design, fastened on sunbonnet style. The babies appear in gorgeous patterns and most astonishing colors. Long kimonos flowered in purple, orange, and green are popular and we judge "fashionable."

One thing we are sure is fashionable and that is the elaborate hair-dressing of all "feminines" from the tot of three to the great grandmother. Blacker, sleeker, slicker hair we have never seen. How can we describe it, when we could not possibly do our own to any way resemble it. To be sure, we might anoint our head with oil seven times, pour thereon the ink bottle, slick every hair to the top with a curry comb, then run the switch through what looks like a colored paper napkin ring, after this divide the strands and make a loop or puff as big as a man's cuff—finally fasten these by magic (for we know no other way they can stay put). But even after this ingenious endeavor we would make a failure of a Japanese coiffure. It is the most wonderful thing our eyes have ever beheld. One queer long hair pin at the back seems never to fall out. This is a pure phenomenon. Many a Japanese lady's toilette takes three hours to erect, and is made only once or twice a week, hence the reason for those awful wooden pillows or head rests.

As to the universally worn kimono, it looks rather different to the flimsy thing we hang from our shoulders. While it has no precise fit, it spreads flatly over the back and arms and folds neatly across the chest. It is kept in place by the wide sash or obi. This is the special pride of every woman. To tie the obi, so that it appears to enfold a sofa cushion or two, is a fine art. Indeed, there is more sense in that fat and "cushiony" looking bow, than the foreigner at first knows. Wait till she learns there are no lounges, beds, no Morris chairs, but only matted floors on which to recline and she would be glad of as many cushion bows as there are cartridges in a soldier's belt. Common sense and comfort is there also in the wadded kimono for the same reason. For ladies simply stretch on the matted floor, perhaps on a thin cushion, to write, read, sew and eat. A bit of wadding surely spares one's bones.

Another eccentricity of the feminine world is the extraordinary way of carrying babies. The little bobbing headed babe is fastened snugly in the back of the kimono, while a tight sash is drawn around the bearer's waist so that the baby cannot slip down and out. Often older children carry little brothers and sisters on the back with just a stout band or cord under the baby's arms and another under its knees. The poor little thing flops down "all in a heap" but cannot "wriggle" out. Arms and legs are left free. This accounts for the wonderful muscle development in these wiggling

members. It also accounts for the stunted legs as the strap binds tight under the knee and must stop circulation and growth. With such short and strong "extremities" no wonder the Japanese "jui-jutsu" is the world's greatest wrestler. He is described as a "mammoth bull-frog." The state provides wrestling and fencing schools, but brutal boxing is unknown.

We visited a primary day school for girls and were astonished at its size and departments. The class rooms have blackboards and desks like ours, but are much airier, having glass or paper windows the full length of two sides. All ordinary primary branches are taught, and to our surprise. elementary chemistry, botany, biology, and geology. These come only in higher grade schools in most countries. We were shown pottery, needlework, writing and drawing books of excellent work. The Japanese is inherently intellectual and quick to learn. Of their universities and higher schools we hope to write later.

As to the dwellings in this unique land, they are immensely "queer." We have all heard they are like a bandbox or bird cage, with walls and windows of lattice and paper, and doors and shutters sliding and open to all out of doors—but who ever believed it all! It seemed so manifestly absurd. In a country where there is snow, rain and raw weather how could such fragile houses be possible. A few of us who dread drafts refused to believe. Then too, what about privacy, if half the time the walls do not go to the ceiling, and a finger push afford a peep into the next room, also a lighted candle reveals things by shadow,—how could such houses be! Book writers might say there were paper walls, travelers might declare there were paper walls, nevertheless we could not believe there actually were paper walls, at least outside ones. Now we too, are prepared to assert that there really are whole sides and fronts of houses which are entirely of stout oiled paper, with only sufficient wood for frame work and for the corner beams, joists and door casings. All houses are not constructed with as much paper, still it is surprising how fragile and airy they are. In any city or village one observes these paper sliding sides, open the entire width of the room, showing the spotless matting, polished floors, and raised dais, often in an alcove where the few ornaments are disposed. There is practically no furniture, save a few floor cushions, a brasier, a lamp or lantern, and possibly a head or back rest. On a shelf are the household gods. This is the family shrine, tenderly cared for and always showing a flower or blossoming twig.

A touching ceremony is observed before the shrine at the Lantern Festival or Feast of the Dead. Then the souls of the departed return for three days. The living gather at the cemeteries to conduct to their old home the returned spirits. They prepare for them the best food and flowers. They buy special lanterns and trinkets to make bright the house. No guest is so honored as the beloved dead. The family wear the best clothes they have. They tread softly and speak low. Many tender utterances are murmured, intended only for the blessed spirit. Finally on the third day the Boat of the Dead is prepared. It is often of rice straw or paper, a few feet long, lovingly fashioned by the members of the family. The food, fruits and flowers are piled on the little barque. Then it is solemnly borne to the nearest brook or pond. Freighted with the spirits and bearing at the prow a tiny candle and at the stern some fragrant incense, amid sad farewells, the Ship of Dead Souls is launched on its mournful journey. On the river bank broken hearts wait and tearful eyes watch the faint flicker and the smoking incense until seen no more. Surely ancestor worship and reverence for the dead is strangely beautiful.

Many other customs of tenderness have these filial and aesthetic people. There is poetry and passionate devotion in much that they do. The devotees at the shrines are picturesque in their worship, clapping their hands, then with folded palms bending many times. More graceful bowing than that of the Japanese we do not know. Either in religious reverence or in social etiquette, this bowing is a gracious art. Even at country inns the little maids bow right prettily with slow and easy motion.

Temples and shrines are, of course, a feature of Japan. In this hurried sketch of mere impressions we cannot go into a dissertation on the various religions. Suffice it to say that Shinto (name derived from the Chinese for "way of the gods") the

ancient faith of Japan, is in one sense the national religion. Properly speaking it is not a religion, as it has no sacred books, no dogmas, no future concern for the soul. Rather is it a cult of Nature and of Ancestor worship, which instils also the principles of patriotism. Myriad gods are worshipped, but Shinto Temples and shrines are not filled with images of these. They are, indeed, very plainly furnished. Their beauty lies without. Almost invariably are they set amid some loveliness of nature. This is true in both city and village. Even in the city they stand on some hillside or in a grove surrounded with beautiful trees and ornamented with stone lanterns, bronze animals and many picturesque Tori-i (sacred gate). Broad stone steps lead to rustic terraces. Upon the various levels are different shrines. The natural rock is hewn and fashioned to make space for curious trees, flowering shrubs, and possibly a pretty cascade. Vines and lichen abound and also a lovely green mold which softens and beautifies these sylvan retreats.

Here the devotees of Shintoism repair frequently. On holidays the temples and shrines are crowded with both young and old. A happy meeting place are they for all classes. Booths with trinkets and food line the approach. On the beautiful sacred Isle of Enoshima we saw scores of country pilgrims in their best holiday attire come to worship at the holy shrines. They tarry sometimes for a week, staying over night in the innumerable Tea Houses. The worship appears simple and picturesque. First a pulling of a huge rope which strikes against a metal gong. From this a soft and mellow note resounds. Next the hands are clapped several times, followed by repeated and most graceful bowing. Of course contributions of coin accompany these simple rites.

The Buddhist Temples are much more gorgeous than the Shinto. They have elaborately carved roofs, gateways and interior altars. A gilded figure of Buddha with the sacred lotus is usually seen, with many idols and ornaments for worship and for decoration.

A Japanese may adhere to both Shintoism and Buddhism, as there is no conflict of faith. Buddhism is more truly a religion for it has an elaborate system of ethics and a belief in a future state. While possessing features of highest excellence, the fruits of this religion show that it lacks *spiritual* qualities, which personally we believe Christianity alone can give. Wherever Buddhism is practised there is found, in large proportion, a corrupt priesthood and accursed immoralities. "The Peace that passeth understanding," high hopes and happiness of heart are not characteristics of the Buddhist.

Both Buddhism and Confusianism were introduced into Japan from China about the sixth century after Christ. Confucianism, also, is not properly a religion as Confucius himself always declined to speak of the soul or its immortality. His teaching was simply philosophical and ethical and his system a code of ethical precepts for moral conduct.

It is commonplace to call Japan a flower country, but who half realizes this until he has visited this fairy land. Floral beauty is manifest everywhere. Even in March we found many blossoms fully out—the plum, peach, single cherry—also magnolias, camellias, daphnes were in richest bloom.

It is said there is a particular flower for every month in the year. Special festivals celebrate the cherry blossom in April, wistaria in May, lotus in June, iris in July, azalea in August, clematis in September, chrysanthemums in October, hydrangeas in November.

To call Japan a doll's house land is also a trite remark, but most true. The average height of house or shop in any city does not exceed twenty to thirty feet. Whole streets are not more than twelve to sixteen; some shop fronts are not more than eight feet high. Country station platforms are sometimes only 9 feet high. As the little, narrow gauge train approaches the whole station looks like a child's play house.

Everything in the landscape appears diminutive, even the hills and valleys and wooded sections are on a small scale. The fields are tiny and frequently terraced. Many rice fields are no larger than a garden plot surrounded by a small mud enclosure. These are arranged on different levels for the purpose of drawing off the water after the rice is planted and is fairly grown. Imagine a terraced hill side of richest green barley or garden truck with a generous dotting of blossoming trees,

then a valley set in tiny rich fields with delicate shoots just appearing, and you have a vision of fair Japan in early springtime. If it is well to be in England now that April's there, it is surely well to be in this paradise of green blade and bursting bud. The same sweet murmurings of birds and harmonies of nature are heard in the two island kingdoms.

We had heard of the funny shop signs in attempted English, and sure enough we soon espied some. In our rikisha drives we saw the office of a "Veternally Sergon," of a "Teeth Artist," also a "Medicine and Toilet Shop" (drug store). An alluring tea house had a notice for "whiskies and bandies," "toust and buns" were also served. A trinket seller politely invited the "honorable public" to inspect his much respected wares, which were requested superiorily of his entire own work."

Our sail through the Inland Sea for a day and a night was a real delight, although the weather was cold and the wonderful atmospheric effects were not at their best. Still the sail on placid waters of purest blue, past hundreds of beautiful islands, with a magnificent mountain coast line is an experience never to be forgotten. Alas! sacred Fiji was clouded over, but we live in hope of seeing its snowy crest on our return.

So far our impressions have been gathered only from Yokohama, Kobe and Nagasaki. On return we hope to tour the country and trust to have somewhat more of interest to write.

"GIVE US BARABBAS"

There was a man—a Jew of kingly blood,
But of the people—poor and lowly born,
Accused of blasphemy of God, He stood
Before the Roman Pilate, while in scorn
The multitude demanded it was fit
That one should suffer for the people, while
Another be released, absolved, acquit,
To live his life out virtuous or vile.

"Whom will ye have—Barabbas or this Jew?"
Pilate made answer to the mob, "The choice
Is yours; I wash my hands of this, and you
Do as you will." With one vast ribald voice
The populace arose and, shrieking, cried,
"Give us Barabbas, we condone his deeds!"
And He of Nazareth was crucified—
Misjudged, condemned, dishonoured for their needs.

And down these nineteen centuries anew
Comes the hoarse-throated, brutalized refrain,
"Give us Barabbas, crucify the Jew!"
Once more a man must bear a nation's stain,—
And that in France, the chivalrous, whose lore
Made her the flower of knightly age gone by,
Now she lies hideous with a leprous sore
No skill can cure—no pardon purify.

And an indignant world, transfixed with hate
Of such disease, cries, as in Herod's time,
Pointing its finger at her festering state,
"Room for the leper, and her leprous crime!"
And France, writhing from years of torment, cries
Out in her anguish, "Let this Jew endure,
Dammed and disgraced, vicarious sacrifice
The honour of my army is secure."

And, vampire-like, that army sucks the blood
From out a martyr's veins, and strips his crown
Of honour from him, and his herohood
Flings in the dust, and cuts his manhood down.
Hide from your God, O! ye that did this act!
With lesser crimes the halls of Hell are paved.
Your army's honour may be still intact,
Unstained, unsoiled, unspotted,—but unsaved.

—Pauline Johnson.

Editorial Comment

At long last legislation has been granted by the Legislature of the Province of Ontario, with reference to the Feebleminded and Mentally Deficient. It is a very little legislation, but we are thankful for it. While we had hoped that such legislation might be broader and deeper, yet we realize that perhaps this bill carries us as far forward as Public Opinion at present desires. It is for all of us to get busy now, see that the provisions of this Act are faithfully carried out, agitate for a broader measure and it will be given. It is pleasant to be informed that the April issue of the Public Health Journal had something to do with hastening this legislation. To our mind, the Bill is of so great importance that we present it to you in our own particular corner.

BILL.

An Act Respecting Auxiliary Classes.

HIS Majesty, by and with the advice and consent of the Legislature Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as The Auxiliary Classes Act.

2. In this Act,

(a) "Regulations" shall mean regulations made by the Minister of Education under the authority of this Act and The Department of Education Act.

(b) "Board" shall mean and include a board of education, board of public school trustees, and board of separate school trustees in a city.

3. A board may establish and conduct classes for children who, not being persons whose mental capacity is incapable of development beyond that of a child of normal mentality at eight years of age, are from any physical or mental cause, unable to take proper advantage of the ordinary public or separate school courses.

4. (1) For the purposes of section 3 the board may, subject to the approval of the Minister of Education,

(a) Acquire a site and erect thereon such buildings as may be suitable for the education and training of the pupils;

(b) Establish such course of instruction and training as may be best adapted to secure the mental and physical development of the pupils;

(c) Appoint such teachers and special instructors in ordinary learning or in any useful and beneficial occupation as the board may think proper;

(d) Provide in connection with the classes in the same or a separate building a suitable residence and home for the pupils or such of them as in the judgment of the board, subject to the approval of the inspector of Auxiliary Classes, can be more suitably provided for in

such residence and engage such officers and servants as may be deemed proper for the oversight and care of the pupils in the residence.

(2) With the approval of the Minister a site may be acquired and buildings erected thereon in an adjoining township, and for that purpose the board shall have and may exercise within such township the like powers as within the city for which the board is constituted.

5. It shall be the duty of a board where a residence is established to provide for the due instruction of the pupils in religion by the clergymen or ministers of the respective churches or religious denominations to which they belong, and for their attendance at religious worship.

6. Where a board establishes a residence under this Act, every pupil admitted thereto shall be a ward of the board and shall be subject to the control and custody of the board during school age and for such further period, but not after reaching the age of twenty-one years, as the board, subject to the approval of the Inspector of Auxiliary Classes, may deem advisable.

7. (1) Subject to the regulations pupils shall be admitted to auxiliary classes upon the report of a board consisting of the principal of the school, the school medical inspector and another school inspector or the chief or senior school inspector as the case may be, of which board the principal shall be the chairman approved by the Inspector of Auxiliary Classes.

(2) Pupils may be admitted to auxiliary classes from other municipalities upon such terms as may be permitted or prescribed by the regulations.

(3) Such fees for instruction and for board and lodging shall be payable by the parents or guardians of the pupils, as may be fixed by the board, with the approval of the Minister of Education.

8. Where a board has established auxiliary classes under this Act, it shall be its duty to provide for the proper supervision of the health and treatment of every pupil attending the classes and for proper medical treatment of every pupil who appears to the principal or inspector to require the same.

9. The board may direct the school medical inspector or such other officer as the board may appoint, to visit pupils in their homes and to consult and advise with their parents as to their treatment and the conditions which will best enable the pupils to attain the greatest possible degree of intelligence and education.

10. Subject to the regulations, the board may provide for the transportation of pupils to and from the classes, and may pay for the same out of the funds provided under section 11.

11. The moneys required by the board for the carrying out of the objects of this Act shall be raised and levied in the same manner as for the erection, establishment, improvement or maintenance of the public or separate schools under the control of the board.

12. (1) The Minister of Education may from time to time make regulations subject to the approval of the Lieutenant-Governor in Council for the administration and enforcement of this Act and for the establishment, organization, government, examination and inspection of auxiliary classes, the admission and dismission of pupils, the duration of their term of residence, and for prescribing the accommodation and equipment of school houses, residences and buildings and the arrangement of school premises for auxiliary classes.

(2) The regulations may provide for the appointment of a duly qualified medical practitioner who may be an officer of any department of the Government to be Inspector of Auxiliary Classes and may define the duties and powers of the Inspector.

13. Subject to the regulations the Minister shall annually apportion among auxiliary classes all sums of money appropriated as a special grant therefor.

14. The Special Classes Act, being chapter 272 of the Revised Statutes of Ontario, 1914, is repealed.

Book Reviews

The great consulting room of a wise man is a library.—Dawson

An Imperial Race.

The alarmist report that the race is degenerating, decaying, dying, seems to have been shouted from the housetops many moons ago, for our old friend, Horace, informs us that:

"Aetas parentum pejor avis tulit
Nos nequiores mox daturos
Progeniem vitiosiorem."

"The age of our parents, itself less vigorous than that of our grandsires, has produced in ourselves a more degenerate race which in time will give to the world a still more vicious progeny." This plaint of Horace's sounds very modern, sounds very much like the battle cry of present-day associations for child welfare work. "Rearing an Imperial Race" contains the different papers and discussions arising from them given at the Second Guildhall School Congress, held in London, June 30th and July 1st, 1913, on home, school, and personal hygiene; the day open-air school; the residential open-air school; diet and food value; cookery "a lost art"; domestic catering; school meals; oral hygiene and mastication; the school and the home, and a host of other subjects. It contains a fund of valuable information for those engaged in all lines of child welfare work in school or institution, civic or philanthropic.

The relation of health to education was discussed in all its aspects. Indeed, it is worthy of note that the prevalent observation of speakers was that the physical side of education—health education—is for the first time in our history, to receive its due share of attention. For the first time in history careful scientific attention is to be given to the foundation on which the entire edifice of national education must be reared. This must include consideration of the dietary and home conditions of both town and county school children, not only the teaching of personal, home, and civic hygiene, but also a consideration of food and food values, buying, preparation, cooking utensils, and other housecraft and their relation to local economic conditions. A prominent feature was the reports of the school medical inspectors dispelling the common illusion of the healthy country child. Malnutrition among country school children was reported rife, due to bad cooking, unwholesome food, and unhygienic conditions. There is great need of increased efforts to secure co-operation of the parents in the work of the schools. More intimate relations should exist between the parent, the school teacher, the school nurse, and the school physician in the social life of the community. School life does not touch the actual life, or life experiences of the child so as to exclude in the child's life the traditions, habits, and superstitions of parents ignorant of the laws of health. Of the many aims of education not the least important is that of healthy individuals, whether men or women, for their duties to the community. This is especially applicable to the management of the home which is the indispensable factor, the moral unit in the community. Trained intelligence means economy, efficiency, zeal. No nation can rest on surer foundations than that in which the most capable women, those most highly trained, are the housekeepers and the mothers. In the truest sense they are the Empire Builders. The closer the harmony between the school teacher, the school nurse, and the school physician, the better for the children. The public and the school governing bodies are not yet sufficiently alive to the lamentable amount of preventable disease that exists among children, nor do they fully appreciate the necessity of basing our educational methods on the physiological and psychological requirements of the young. It was particularly shown how much disease arises in the early years of the growing child in regard to everyday habits. The ill-results

from defective teeth were, perhaps, never before so thoroughly exposed.

It may be said that the chief concern of the Congress was the study of the prevention of disease, rather than its cure, and that its deliberations definitely marked the beginning of a great era of preventive medicine, the triumphs of which will eclipse even those splendid victories of medicine which have characterized the past twenty or thirty years. It is a great thing to have shown that health depends on living in a common-sense manner and attending to common-sense rules; and that it is better to bring up families in a healthy way than to allow them to become weakly through careless disregard of Nature's laws, and then to rely on the magic of a pill or the power of a prayer to correct the lamentable results of sickness and ignorance.

REARING AN IMPERIAL RACE—Containing a full report of the Second Guildhall Conference on Diet, Cookery and Hygiene, with Dietaries; Special Reports from H. M. Ambassadors Abroad; Articles on Children's Food Requirements, Clothing, Etc.—Edited by Charles E. Hecht, M.A.—Illustrated. London—Published for the National Food Reform Association by the St. Catharines Press—34 Norfolk St., Strand, 1913.

Diseases of Children.

This is a treatise on the medical and surgical diseases of infancy and childhood, with especial emphasis upon clinical diagnosis and modern therapeutics for practitioners and students of medicine. The book is of convenient size, is well illustrated (most of the illustrations being original), and altogether will prove a valuable addition to the medical library. The fact that it has already reached a second edition is evidence of its popularity. We can heartily commend it in the special function which it seeks to fill.

MODERN DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN—By Herman B. Sheffield, M.D., Instructor in Diseases of Children, New York Postgraduate School and Hospital, Etc.—Second Edition, with 207 Illustrations.—F. A. Davis Company, Philadelphia—1912—Price, $4.50 net.

Immunity.

This is a translation of a German text upon a subject that has come to be of peculiar interest to the medical profession. The theoretical has gradually given place to the practical. Years ago the theoretical side was of the greatest interest to research workers, but out of all the laboratory investigations have grown the most practical methods of treatment. This book is to serve a purely practical purpose, the aim being to so present the subject that the general medical man, who is even slightly acquainted with laboratory work, can learn the details of the various reactions and their significance. The experience of the author was gained in the laboratory under the guidance of Prof. Wassermann. The book has been thoroughly revised so as to cover the very latest information on every subject. The original German text has been followed closely. However, some features which have been deemed of special interest to English-reading physicians have been inserted. It seems to us that here we have a very full discussion of a very important subject.

IMMUNITY—Methods of Diagnosis and Therapy and Their Practical Application—By Dr. Julius Citron, Assistant at the University Clinic of Berlin II. Medical Division—Translated from the German and Edited by A. L. Garbat, M.D., Assistant Pathologist, and Adjunct Visiting Physician German Hospital, New York—2nd Edition—Revised and Enlarged, 30 Illustrations, Two Colored Plates and 8 Charts—Philadelphia—P. Blakeston's, Son & Co., 1012 Walnut St.—Price $3.50.

First Aid.

It is one of the results of the humanitarianism of this twentieth century that so much is being said and written about First Aid to the Injured. For with all our "Safety First" propagandas accidents will happen, and then it is essential that some one should know the right thing to do at once. Many a life has been saved and much suffering avoided because a good Samaritan with knowledge of First Aid in his cranium happened to be passing that way. We have received four books on this subject, manuals of the Am-

erican National Red Cross Association, and they are indeed very excellent booklets. Each of the four has the same material extending over 116 pages, comprising the usual hints on First Aid Work, well arranged and nicely illustrated. After that each book specializes. One becomes a railroad man's companion; another, a miner's helpful suggester; a third, a police and firemen's pocket friend; and a fourth, a woman's home treasure. Each is calculated to hint at the special difficulties met with in these four walks of life and to suggest treatment. In Canada we are naturally better acquainted with the St. John's Ambulance Manual, but it would be very instructive for those interested in First Aid to procure these four manuals and thus get perhaps a broader view. There can be no doubt about their value.

AMERICAN RED CROSS ABRIDGED TEXT BOOKS ON FIRST AID—Railroad Edition; Miner's Edition; Police and Firemen's Edition; Women's Edition—Four Separate Volumes—By Major Charles Lynch, Medical Corps, United States Army, and First Lieut. M. J. Shields, Medical Reserve Corps, United States Army—With Illustrations—Each Volume 30 cents—Philadelphia—P. Blakeston's, Son & Co., 1012 Walnut St.

Anatomy and Physiology for Nurses.

Most books on this subject prepared for nurses are unsatisfactory. Sometimes they tell too much, at other times too little. It is with peculiar pleasure that we welcome this volume, because it seems to be an almost ideal publication. The subject matter is well arranged, and within its 550 pages a vast amount of information is presented because of such arrangement. The illustrations are numerous, well executed, and what is best of all, good and true. We make this last remark because in so many books for nurses the illustrations are almost useless. At the end of the volume a most splendid glossary is given. Chapter XXV. is concerned with "The Organs of Generation," and we are surprised to find that it describes only the female organs of generation. Why should this be? In a volume of this kind the subject should be dealt with in its entirety, and we do not see why the male organs of generation should be taboo. There is a too great tendency to slur over subjects which might better be dealt with comprehensively. We are, however, very much pleased with this book and can heartily recommend it to nurses or to any readers who may wish to pursue this subject along these lines.

TEXT BOOK ON ANATOMY AND PHYSIOLOGY FOR NURSES—By Amy E. Pope—Author with Anna Caroline Maxwell of "Practical Nursing" and Instructor in the School of Nursing of the Presbyterian Hospital in the City of New York—With 135 Illustrations—G. P. Putnam's Sons, New York and London—1913—Price, $1.75.

Books Received.

The following books have been received, and the courtesy of the publishers in sending them is hereby acknowledged. Reviews will be made of these volumes from time to time.

TEACHINGS SEX HYGIENE IN THE PUBLIC SCHOOLS—By E. B. Lowry, M.D., Author of "Herself," "Himself," etc.—Chicago—Forbes and Company, 1914—Price, 50 cents.

CONSERVATION OF COAL IN CANADA—With Notes on the Principal Coal Mines—By W. J. Dick, M. Sc., Mining Engineer of the Commission of Conservation—Published by the Commission of Conservation, Canada, and Printed by The Bryant Press, Ltd., Toronto.

PHYSICAL TRAINING (Junior Course)—Swedish exercises, games, swimming, diving, life saving.

PHYSICAL TRAINING (Senior Course)—Swedish exercises, athletic sports, swimming, diving, life saving.

By E. John Solano, author of the "World's Armies," in the Encyclopædia Brittanica Year Book 1913, Inventor of the Solano Target, etc.—The Bobbs-Merrill Company, Publishers, Indianapolis. Price 75c. net, each.

Canadian Poets

PAULINE JOHNSON

(Tekahionwake)

[*"Her death is not only a great loss to those who knew and loved her: it is a great loss to Canadian literature and to the Canadian nation. I must think that she will hold a memorable place among poets in virtue of her descent and also in virtue of the work she has left behind, small as the quantity of that work is.. I believe that Canada will, in future times, cherish her memory more and more, for of all Canadian poets she was the most distinctly a daughter of the soil, inasmuch as she inherited the blood of the great primeval race now so rapidly vanishing, and of the greater race that has supplanted it." . . . .—Theodore Watts-Dunton.*]

PAULINE JOHNSON (Tekahionwake) was born at "Chiefswood" on her father's estate, in the Reserve near Brantford, Ontario, in 1862. She was the youngest of four children, and early showed a marked tendency towards the reading and the writing of rhymes.

Her father was the late G. H. M. Johnson (Onwanonsyshon), Head Chief of the Six Nations Indians, and a descendant of one of the fifty noble families of Hiawatha's Confederation, founded four centuries ago. Her mother was Emily S. Howells, of Bristol, England.

Pauline's education in school lore was meagre,—a nursery governess for two years, attendance at an Indian day school near her home, for three years, and two finishing years at the Brantford Central School—but her education in the School of Nature was extensive, and that with her voracious reading (of poetry particularly) and retentive memory, richly stored her naturally keen brain.

As a poet and recitalist, Miss Johnson won her first distinction of note in 1892 when Mr. Frank Yeigh, of Toronto, originated and arranged for an unique entertainment of Canadian literature, read or recited by the authors themselves. Miss Johnson's contribution was "A Cry From an Indian Wife," which presented the Red

man's view of the North-West Rebellion, and won for the author the only encore of the evening. The next day the Toronto press so eulogized her performance and spread her fame, that Mr. Yeigh arranged for a recital, two weeks later, to be given in Association Hall entirely by herself. Her best known poem, "The Song My Paddle Sings," was written for this first recital. There followed a series of recitals throughout Canada under Mr. Yeigh's management, in the hope that their financial success would be such as to enable the poet to go to England and submit her poems to a London publisher. In two years this object was attained, and John Lane of the "Bodley Head" accepted and issued "The White Wampum," which was received with enthusiasm by the critics and the press generally. Pauline Johnson had "arrived," and as a poet and entertainer she was henceforth in demand in the British Isles, as well as in Canada and the United States.

In 1903 her second book of verse, "Canadian Born," was published by the Morang Publishing Company, of Toronto, and the entire edition was sold out within a year.

Miss Johnson continued her recitals for sixteen years, when failing health compelled her to retire. She located in Vancouver, B.C., where she resided, with increasing ill-health, until her death in 1913.

A complete and beautiful edition of our author's poems, entitled "Flint and Feather," with an introduction by the great English critic, Theodore Watts-Dunton, has recently been published by The Musson Book Company, of Toronto and London. And besides this notable volume, she has left behind a number of rare Indian legends, and a series of most entertaining tales for boys.

Canadians have long been proud of Pauline Johnson, and as the years pass, their love of her and their pride in her achievement will continue to increase. The writer of this article met her on the train while she and Mr. McRaye were en route for England, in 1896; and her beauty and charm of person, her delightful conversation, her warmth of heart and sympathetic interest in others, have persisted in his memory with a steadfast radiance.

THE SONGSTER

Music, music with throb and swing,
Of a plaintive note, and long;
'Tis a note no human throat could sing,
No harp with its dulcet golden string,—
Nor lute, nor lyre with liquid ring,
Is sweet as the robin's song.

He sings for the love of the season
When the days grow warm and long,
For the beautiful God-sent reason
That his breast was born for song.

Calling, calling so fresh and clear,
Through the song-sweet days of May;
Warbling there, and whistling here,
He swells his voice on the drinking ear,
On the great, wide, pulsing atmosphere
Till his music drowns the day.

He sings for love of the season
When the days grow warm and long,
For the beautiful God-sent reason
That his breast was born for song.

THE SONG MY PADDLE SINGS

West wind, blow from your prairie nest,
Blow from the mountains, blow from the west.
The sail is idle, the sailor too;
O! wind of the west, we wait for you.
Blow, blow!
I have wooed you so,
But never a favour you bestow.
You rock your cradle the hills between,
But scorn to notice my white lateen.

I stow the sail, unship the mast;
I wooed you long but my wooing's past;
My paddle will lull you into rest.
O! drowsy wind of the drowsy west,
Sleep, sleep,
By your mountain steep,
Or down where the prairie grasses sweep!
Now fold in slumber your laggard wings,
For soft is the song my paddle sings.

August is laughing across the sky,
Laughing while paddle, canoe and I,
Drift, drift,
Where the hills uplift
On either side of the current swift.

The river rolls in its rocky bed;
My paddle is plying its way ahead;
Dip, dip,
While the waters flip
In foam as over their breast we slip.

And oh, the river runs swifter now;
The eddies circle about my bow.
Swirl, swirl!
How the ripples curl
In many a dangerous pool awhirl!

And forward far the rapids roar,
Fretting their margin for evermore.
Dash, dash,
With a mighty crash,
They seethe, and boil, and bound, and splash.

Be strong, O paddle! be brave, canoe!
The reckless waves you must plunge into.
Reel, reel,
On your trembling keel,
But never a fear my craft will feel.

We've raced the rapid, we're far ahead;
The river slips through its silent bed.
Sway, sway,
As the bubbles spray
And fall in tinkling tunes away.

And up on the hills against the sky,
A fir tree rocking its lullaby,
Swings, swings,
Its emerald wings,
Swelling the song that my paddle sings.

THE LOST LAGOON

It is dusk on the Lost Lagoon,
And we two dreaming the dusk away,
Beneath the drift of a twilight grey,
Beneath the drowse of an ending day,
And the curve of a golden moon.

It is dark in the Lost Lagoon,
And gone are the depths of haunting blue,
The grouping gulls, and the old canoe,
The singing firs, and the dusk and—you,
And gone is the golden moon.

O! lure of the Lost Lagoon,—
I dream to-night that my paddle blurs
The purple shade where the seaweed stirs,
I hear the call of the singing firs
In the hush of the golden moon.

IN THE SHADOWS

I am sailing to the leeward,
Where the current runs to seaward
Soft and slow,
Where the sleeping river grasses
Brush my paddle as it passes
To and fro.

On the shore the heat is shaking
All the golden sands awaking
In the cove;
And the quaint sand-piper, winging
O'er the shallows, ceases singing
When I move.

On the water's idle pillow
Sleeps the overhanging willow,
Green and cool;
Where the rushes lift their burnished
Oval heads from out the tarnished
Emerald pool.

Where the very silence slumbers,
Water lilies grow in numbers,
Pure and pale;
All the morning they have rested,
Amber crowned, and pearly crested,
Fair and frail.

Here, impossible romances,
Indefinable sweet fancies,
Cluster round;
But they do not mar the sweetness
Of this still September fleetness
With a sound.

I can scarce discern the meeting
Of the shore and stream retreating,
So remote;
For the laggard river, dozing,
Only wakes from its reposing
Where I float.

Where the river mists are rising,
All the foliage baptizing
With their spray;
There the sun gleams far and faintly,
With a shadow soft and saintly,
In its ray.

And the perfume of some burning
Far-off brushwood, ever turning
To exhale
All its smoky fragrance dying,
In the arms of evening lying,
Where I sail.

My canoe is growing lazy,
In the atmosphere so hazy,
While I dream;
Half in slumber I am guiding,
Eastward indistinctly gliding
Down the stream.

AS RED MEN DIE

Captive! Is there a hell to him like this?
A taunt more galling than the Huron's hiss?
He—proud and scornful, he—who laughed at law,
He—scion of the deadly Iroquois,
He—the bloodthirsty, he—the Mohawk chief,
He—who despises pain and sneers at grief,
Here in the hated Huron's vicious clutch,
That even captive he disdains to touch!

Captive! But *never* conquered; Mohawk brave
Stoops not to be to *any* man a slave;
Least, to the puny tribe his soul abhors,
The tribe whose wigwams sprinkle Simcoe's shores.
With scowling brow he stands and courage high,
Watching with haughty and defiant eye
His captors, as they council o'er his fate,
Or strive his boldness to intimidate.
Then flung they unto him the choice:

"Wilt thou
Walk o'er the bed of fire that waits thee now—
Walk with uncovered feet upon the coals,
Until thou reach the ghostly Land of Souls,
And, with thy Mohawk death-song please our ear?
Or wilt thou with the women rest thee here?"
His eyes flash like an eagle's, and his hands
Clench at the insult. Like a god he stands.
"Prepare the fire!" he scornfully demands.
He knoweth not that this same jeering band
Will bite the dust—will lick the Mohawk's hand;
Will kneel and cower at the Mohawk's feet;
Will shrink when Mohawk war drums wildly beat.
His death will be avenged with hideous hate
By Iroquois, swift to annihilate
His vile detested captors, that now flaunt
Their war clubs in his face with sneer and taunt,
Not thinking, soon that reeking, red and raw,
Their scalps will deck the belts of Iroquois.

The path of coals outstretches, white with heat,
A forest fir's length—ready for his feet.
Unflinching as a rock he steps along
The burning mass, and sings his wild war song;
Sings, as he sang when once he used to roam
Throughout the forests of his southern home,
Where, down the Genesee, the water roars,
Where gentle Mohawk purls between its shores,
Songs, that of exploit and of prowess tell;
Songs of the Iroquois invincible.

Up the long trail of fire he boasting goes,
Dancing a war dance to defy his foes.
His flesh is scorched, his muscles burn and shrink,
But still he dances to death's awful brink.
The eagle plume that crests his haughty head
Will *never* droop until his heart be dead.
Slower and slower yet his footstep swings,
Wilder and wilder still his death-song rings,
Fiercer and fiercer thro' the forest bounds
His voice that leaps to Happier Hunting Grounds.
One savage yell—

Then loyal to his race,
He bends to death—but *never* to disgrace.

Correspondence Corner

Pleasant Words.

Yorkton, Sask., April 10, 1914.

The Editor,

The Public Health Journal:

Sir,—Kindly send me The Public Health Journal. I cannot get along without it. Of all the journals I take yours is my favorite, and when I miss it I lose most. Start me with the March number, as I do not want to miss one of those excellent Specials on School Work. All power to you in your magnificent work. I am,

Yours, etc.,

H. R. LINDSAY, M.D., M.O.H.

WITHOUT COMMENT.

In our mail bag not many days ago we received the following from Dr. Chas. G. Sutherland of Moose Jaw. There was no word of comment and so we print the contents of the envelope with our sincere thanks to Dr. Sutherland for calling our readers' attention to what is being said about us in the great West.

"We have editorially commented but recently on the problem of the feeble-minded. That this is becoming an important subject to all who are interested in civic, provincial or national government is apparent from the fact that the April number of The Public Health Journal, the official organ of the Canadian Public Health Association, just issued, devotes nearly the whole of its space to twelve specially written articles on The Problem of the Feeble Minded. That it is also a problem of interest to the student of political economy is apparent in the writing of Mrs. Willoughby Cummings, the corresponding secretary of the National Council of Women, where she gives the history of the work that this organization has done.

Interviewing the Provincial Secretary of the Province of Nova Scotia they placed the facts so forcefully before him that he closed the interview with this statement, "Why this is a question not of philanthropy, but of political economy. I never understood it before."

Lucy M. Brooking, superintendent of the Alexandria Industrial School in Toronto in a virile article entitled "We Pay," quotes her personal experiences to demonstrate the need of wider education of those who sit in our parliaments and even in our council chambers, and fully justifies her assertion that, "Verily our ways of effecting economy, in finance alone, not to mention human life, are strange and past finding out."

An article on "Mental Defectives in Alberta" brings the problem closer home."—Editorial Moose Jaw Morning News, April 23, 1914.

"A local enthusiast in all matters pertaining to the betterment of the public weal has presented several numbers of the Public Health Journal to the Public Library so that all who are interested may have an opportunity of reading this splendid series of articles."—News item, same issue.

You would be pleased to look with us, day by day, into our mail bag and read the pleasant words that come to us from friends scattered all over this broad Dominion. We have space only to glean one or two each month. We haven't had a word of adverse criticism. It has been all praise. If you have any criticism send it on. We should enjoy hearing from you.

Matters Military

Canadian Army Medical Corps

WINTER CAMPAIGNING IN CANADA

By LIEUT.-COL. J. W. BRIDGES

Permanent Army Medical Corps, Montreal

Read at the 7th Annual Meeting of the Association of Medical Officers of the Canadian Militia, 25th February, 1914.

"WAR," says Napier, "tries the strength of the military framework. It is in peace, that the frame work, itself, must be formed.

The object of our military association meetings here, and all our discussions, on military themes are, to add, in some small particular, to the strength of our Canadian military framework.

In order to get some hints on the subject to be discussed here to-day, viz., "The Winter Aspect of Campaigning in Canada," I approached various reputable staff officers, and asked them their opinion on the feasibility of winter operations in this country. In nearly every case my effort was barren of results, for I was politely dismissed, with the admonition "don't." The very thought of such a catastrophe, evidently seemed to them, either too terrible, or too remote to admit of even an academic discussion. But is this attitude right or excusable, on the part of those who are charged with the defence of this Dominion? I think the answer is an unqualified "No." The spirit of such is bad. We would lament the necessity which would require the peace loving and industrious people of Canada to arm themselves and again go forth to battle, but we have a goodly heritage, which we are bound to safeguard, regardless of *time, climate* or *conditions.*

"War is hell," says a celebrated general, but war is imminent and will continue so, as long as ambitious nations lust for supremacy and self-aggrandizement. Arbitration so much talked of, at the present day, is only admissible and will only be favourably considered, when war for that nation, is inexpedient, meaning being *unprepared.* "How live the little fishes in the sea," asks one of Shakespeare's buffoons, "Oh," says the master, "just as the landers do, the big fish eats up the little ones." So it is with nations who are unprepared for defence, they must eventually go into the maws of their more voracious and powerful neighbors, and we as Canadians must expect no better fate unless we are prepared for every eventuality, and whether attacked by sea or by land, in summer or in winter, are prepared to do as our brave fathers have done, fight to the last ditch, or until the invading *enemy,* as it was forced to do, in the last war

of Canadian invasion, having made no less than a dozen attempts at crossing our frontiers, with depleted treasury, commerce on the sea destroyed and a part of its own territory lost, was compelled after over two years of fighting, to gladly sue for peace.

Canada no doubt has a variable climate, but she is our home. A land of which we are justly proud; here are our altars and our firesides, the graves of many of our ancestors, and all we hold dear. Our sturdy patriotic ancestors reclaimed it from the wilderness and the savages with much toil, suffering and blood; many of them gave their lives in its defence. They fought for her, not alone when the green fields and babbling brooks were kissed by the summers' sun, but when the storms of winter roared around their camp fires, while their dear ones, left at home in the more isolated settlement, often listened at night, to the howling of the hungry wolves, as they prowled around their dwellings, and at times, becoming more bold, even looked through the windows at the tempting morsels within.

Our forefathers in those days, although peace loving and untrained in the arts of war, took their places in the ranks and fought beside veterans who were considered the flower of the British Army and lost nothing in reputation by the comparison, to protect their homes, their country and to maintain their British connection.

To arrive at some vague idea of what Canadians could do in a winter campaign at the present day, we must examine the records of what has been done in other winter campaigns of history, and by *analyzing, comparing* and *contrasting* the conditions of service at that time, with those of the present, we may draw forth deductions as to what is possible to us.

Winter Marching

It was during the War of 1812 that the greatest winter march, known to history took place, when the 104th New Brunswick Regiment marched through the wilderness, practically an unbroken forest, all the way from Fredericton to Quebec. This was a Militia Regiment, for local defensive purposes, but in 1813 by a great burst of loyalty, they recruited themselves to full strength, and offered their services to the King, to do duty in Upper Canada. There were few roads at this time, and this gallant regiment marched through the wilderness in the dead of winter, February and March, all the way from Fredericton to Quebec and thence to Kingston, seeing their first service at Sacketts Harbour.

This, I consider, one of the greatest winter marches in history.

It is no myth. I hold here in my hand a list of the officiers of that regiment, and a very great friend of mine, Mr. A. D. Thomas, of Fredericton, whose father, grandfather, and two uncles marched with the 104th, has now in his possession a muster roll of the whole Regiment.* His father was a boy of fourteen years, He was not issued with snowshoes and performed most of the march walking on Major Drummond's—who was second in command and who fell at Fort Erie—in rear of the Major himself. The Regiment consisted of 1,050 of all ranks. Each company had a pioneer who marched ahead with axe and pickaxe to clear away obstructions and erect temporary breastworks if necessary. A few scouts and Indians also went ahead blazing the trees, and at a distance of every twenty miles, a big brush camp capable of holding a hundred men was erected. The camp was circular in shape, but with very little roof, from this the snow was shoveled away, green boughs put down over which blankets were spread; in the centre a big hardwood fire blazed, around which the troops slept. The only transport consisted of what the men could carry walking on snowshoes and drawing toboggans. They encountered one of the worst snowstorms in history, but apparently lost no men, arriving at Kingston full of fight.

On November the 19th, 1861, during the Civil War of the U. S. A., two Southern commissioners, Messrs. Slidell and Mason, while on the British mail

*For Officers, see Appendix.

steamer Trent, on the way to England, were overhauled by the Federal gunboat, the Jacinto, under Capt. Wilkes, and taken off. This defiant outrage on the honour of the British nation, led to a declaration of war on the part of England, and she started shipping troops to Halifax, N.S., with a view to landing them on the American frontier. They also were hauled on sledges from St. John, N.B., to River du Loup, along practically the same route taken in the old days by the 104th. The latter place was then the terminus of the G. T. R. This was another winter march, but under more comfortable conditions than the preceding, as roads had in the meantime been opened up.

Surgeon-General Sir A. D. Home, V.C., K.C.B., a surgeon who had won his Victoria Cross in the Indian Mutiny, in his Memoirs gives an account of the 577 mile march. He hurried on, ahead, to make preliminary hospital and sanitary arrangements and to see to the comforts of his men. With the British treasury at his back he had everything in his favor, for smooth sailing. A few definite regulations were drawn up for the guidance of the troops. They were to travel by day and rest by night, at the various stopping places on the line already mentioned, and contracts were made for the erection, if necessary, of temporary houses in which the men were to rest for the night. To provide for this, the wood was hewn, sawn and built up and stoves were set up to warm the building; advantage was taken of any public buildings found at such places, as Fredericton, Woodstock, Grand Falls, etc. Every soldier was served out with especially warm clothing, a pair of boots over which he wore deerskin moccasins or goloshes; his greatcoat was lined with flannel, he was given a sealskin cap covering ears and neck and coming well over the sides of the face; a pair of fur gauntlet gloves, and, lastly, a rug, to wear at his discretion in the sleigh. Warnings were given to the men on the subject of precaution against frostbite, and instructions how to act when its advent was suspected. The rations were special, excellent of their kind and abundant. A hot meal was in readiness for the detachment as soon as it arrived at the end of the day's journey. Instructions were given that the men should be systematically exercised during the day's journey by occasionally walking for a stretch. How to prevent drink from being procured by the men was the subject of much consideration. By the zealous and unremitting co-operation of the local authorities along the line of road, however, success was almost completely reached. Comparatively few men succeeded in procuring the means of injuring themselves. The only casualties were two, one man made stubborn by drink refused to wear his gloves and had his hands frozen; another sank down in a drunken sleep to the bottom of the sleigh and was taken out dead. The U. S. now thought it time to apologize, and operations ceased, the troops for the most part returning to England, although a few were kept in this country for instructional purposes.

Apropos of this march, the British Government sent for the transportation of the troops sleighs or sledges, which up to a few years ago were still at St. John, N.B., as curiosities. No Canadian would undertake to draw them, the farmers, of course, using their own sledges which were lighter and more expeditious.

From these *historic marches*, into which I have gone in some detail we learn that that part of campaigning in Canada can be carried out, without very much difficulty and much more readily now than in the past, for now we have the country well opened up by good roads, and a veritable network of railways running in all directions. However, marching is not all of a winter campaign.

The History of the War of 1812, at least the medical part, is very fragmentary indeed. Dr. Douglas, who was Assistant-Surgeon of the 8th Regiment, and served through that campaign, has written a little book, which he dedicated to Sir James McGregor, Lord Wellington's P.M.O., and personal and confidential friend, in which he has recorded many of the difficulties which the surgeon of that time had to face. From his writings I gather that there were no very

continuous, decisive or *bloody* battles fought during the winter, but were more in the nature of assaults on fortified positions or raids with a rapid return to their own entrenchments, blockhouses or primitive fortresses. The most trying part for the troops in winter was the constant and exhaustive picquet duty. Sanitary measures were very crude indeed and surgery was almost in its infancy. The troops suffered enormously from diseases due to exhaustive work and exposure to cold while on picquet and sleeping out of doors often by night. Pneumonia, rheumatism, a disease resembling malarial and cholera morbis were very prevalent; the latter was attributed to changes of temperature and drinking unwholesome water. Intermittent fever was also very prevalent especially in the neighborhood of Chippewa. At the seige of Fort Erie, the effective force in the field was reduced to one-half by illness. The tents and blockhouses seemed to be permeable to heavy rains and no time for the sick to undergo convalescence. When discharged from hospital, they had to march off at once, to share the urgent service of defence. Some would even fall by the wayside from weakness. Ophthalmia seems to have been very common in winter also. External parts of the body, such as nose, teeth and ears were very frequently frozen. Later in the war, the constitution of the soldiers became so sapped that they were unable to recover from injuries, or undergo any serious operations. Much constitutional fever followed even trivial wounds and prevented recovery.

Their sanitation must have been vary bad, for he says in summer great swarms of flies hovered about situations where putrefaction was going on. "They came forth in immense multitudes either impelled by *hunger*, or by the *instinctive impulse* of their nature, and when the winds became hushed, and the nights felt close and oppressive, the *succulent maggot* appeared to be immediately called into being, and at such periods I have found numbers of them in the extremities of a stump within the short space of twenty-four hours after amputation." Alas, for our poor ancestors the dangers they faced were not from the enemy alone.

Intermittent fever gave him anxiety. He says, many settlers in Upper Canada had nostrums for the cure of this fever. They were, for the most part, composed of bitter organic infusions and ardent spirits, to which was added cayenne pepper, nutmeg and other aromatic stimulants. Well done Canadians.

Mr. Griffiths, a surgeon, who had charge of the wounded at Fort Wellington after the action of Ogdenburg in 1813, remarks: "The piercing cold of winter was unfavourable to the recovery of those men upon whom I performed amputation. While every medical comfort was afforded me, the hospital accommodation was certainly unfriendly to their general welfare. The difficulty of keeping a uniform temperature in the apartments for the sick was a great drawback. The want of thermometers was also an unfortunate occurrence."

Dr. Douglas points out that one of the great difficulties at that time, and one which wore out the troops and destroyed their morale was the necessity of breaking up the regiments and distributing them over large areas. When an operation would be planned on a particular point their concentration caused great fatigue, exhaustion, loss of time and efficiency. The poverty of the settlers contributed much to the misery of the troops and hastened their breakdown.

The majority of the difficulties experienced in the winter campaigns of the winter of 1812-13 would be non-existent, however, at the present day, with our wonderful facilities for transport, abundance of food, improved sanitation, modern surgery, and perfectly equipped hospitals. The exposure and fatigue incident to picquet duty would still have to be faced, but Dr. Douglas makes a statement which is very encouraging to us, namely that the native Canadian militiaman, inured to hardships and the climate stood the strain better than the regiments of the line, and in many cases showed wonderful stamina.

The Crimea.

In all our historical reading, we learn how forethought, knowledge of existing conditions and preparation, minimize difficulties and mitigate suffering.

This fact is exemplified by a comparison of the two winters spent in the Crimea, by the British troops. The Crimean winter usually lasts from November to April, inclusive. The suffering and loss of life during the first winter was appalling, mostly due to ignorance, inefficiency, want of organization, neglect of sanitary measures and of course, unavoidable exposure in the trenches. But to show that much of this suffering and fatality was preventable, compare the improvement which took place during the *second* winter. As you know, all England became aroused. Supplies, clothing and luxuries of all kinds, including efficient nurses were rushed to the front. A Sanitary Commission was formed, and improvement became very marked. When the second winter arrived the army had found itself. The soldiers had learned how to combat the rigors of winter and to adjust themselves to existing conditions, and whereas 63 per 100 died from disease during the first winter (54-5), during the second, only 3.38 per 100 succumbed.

This shows what organization, preparation and knowledge can effect.

In modern times, the war in Manchuria, furnishes us with a better object lesson of what "Winter Campaigning in Canada" would be for us.

The temperature with them was, frequently below zero, cold piercing winds, humid atmosphere, with much snow.

Frostbites of the fingers, hand and feet were quite common, but rather of a mild nature, cases of a severe nature leading to gangrene, were rare.

While troops can readily *march* in winter, the more difficult and dangerous problem is, when they have to get in positions where inaction is enforced, perhaps at night, in the snow and unable to move about, in order to maintain circulation. Boots become wet, frozen and pinch the feet. Gloves wet and no chance to dry them, as unable, frequently, to light fires, due to the nearness of the enemy.

It is reported that the men often went to sleep unconsciously, being worn out with fatigue, want of sleep and want of food.

This winter experience, however, led the Japs at a very early date, to take measures to protect themselves:

(1) The boots were well greased, especially along the welts.

(2) The men were given more than one pair of socks and gloves, so as to have a change, if wet.

(3) If halted for a long time the men were made to take off their boots and put on Chinese felt or straw shoes.

(4) Each soldier was given an issue of sugar, which he carried in his pocket and which he was told to eat as he lay in position. This kept him awake and increased his bodily warmth by combustion.

Strange to say no cases of death occurred from the extreme cold. These good results must have been due to the excellent clothing. In dressing wounds the clothing was not removed until the patient reached the Field Hospital, but a small patch was cut away over the injury which was quickly dressed. They apparently had difficulty with their rations, which consisted mostly of rice and had to be carried uncooked, as the cooked ration got quickly frozen. The drugs also got frozen, except the tinctures. Liq. camphore and liq. morphinea were drugs mostly used. These were not injured by the cold. Elastic tourniquets were carried by the Medical Corps over their shoulders, but under their greatcoats.

The Japs seemed fairly well satisfied with the winter measures taken, only recommending a change in the rice ration and a better quality of boot. They appear to have taken better care of their horses than in the Crimea, digging trenches or caves for their shelter. It must be universally acknowledged, that

the army in Manchuria had wonderful results, seeing that they were pioneers at this kind of modern fighting in the depths of winter.

I think the lesson that we can fairly draw from the foregoing historical notes, is that we could fight a fairly good defensive campaign, even in the depths of our ordinary Canadian winter. We have unlimited transport, unlimited food supply, and know how to adjust ourselves to winter conditions. More winter training than we, at present have, seems to me advisable.

The Kingston Artillery Brigade (R. C. H. A.) a few years ago went out for four days in February, on one of which the temperature was 6 below zero. They bivouacked, both men and horses, and returned without any casualties. The horses were covered with the ordinary service blanket with extra blankets hung around and dropping nearly to the ground. The men had straw to sleep on with plenty of covering, plenty of good hot food, and a very satisfactory experimental outing was the verdict.

With those fleece-lined jackets with deep lined collars, such as the Canadian hunters use, heavy warm underclothing, big thick woollen mittens, such as the fisher women of Nova Scotia knit for their husbands, shoepacks taking several pairs of socks, fur caps to protect the ears, *portable kitchens,* wherein hot meals are made ready for the men as soon as they come to a halt, plenty of straw for the comfort of the men on bivouac, I see no reason why our troops could not manage to keep the field, *defensively,* during the greater part of any ordinary winter, at least our position, must be considered superior to that of any invading force.

With reference to collecting the wounded, nothing can possibly excel the Canadian toboggan. Light, comfortable, low, warm, easily transported, it would minimize danger to the patient from rifle fire and economize stretcher bearers. No. 5 F. A. in our Division, has been doing some winter drill along this line, and Sergt.-Major Murphy, of the A. M. C., has drafted a series of very serviceable drill orders. For execution the ordinary farmer's sled with high box sideboards. filled with straw and covered with blankets, would be superior to the ordinary ambulance waggon in summer.

List of Officers of the King's New Brunswick 104th Regiment.

Colonel A. Halkett
Major W. Drummond
Major B. Moodie
Captain J. Maule, Brevet Major
Captain G. Gerow
Captain R. Leonard
Captain A. G. Armstrong
Captain G. Shore
Captain P. Denniss
Captain W. Proctor
Captain W. Bradley
Captain Edwd. Holland
Lieutenant A. Rainsford
Lieutenant C. Rainsford
Lieutenant F. Shaffalisky
Lieutenant I. McKinnon
Lieutenant W. B. Phair
Lieutenant J. de Lancey
Lieutenant J. Carmichael
Lieutenant J. Besserer
Lieutenant T. Leonard
Lieutenant C. D. Rankin
Lieutenant S. Rigby
Lieutenant F. Sutherland
Lieutenant A. Campbell
Lieutenant H. N. Morson
Lieutenant A. H. Playfair
Lieutenant G. Creed
Lieutenant T. C. Couter
Lieutenant A. C. McDonald
Lieutenant T. Moore
Lieutenant E. W. Solomon
Ensign S. Graves
Ensign C. Jobling
Ensign J. McLauchlan
Ensign I. Coyne
Ensign W. Martin
Paymaster H. Carmichael
Adjutant G. Jobling
Surgeon W. D. Thomas
Assistant Surgeon H. Emmerson
Assistant Surgeon W. Woodford
Quartermaster Wm. Mcdonald

NOTES.

Lieutenant (supernumerary) C. MacArthur is permitted to resign his commission. 25th February, 1914.

To be provisional Lieutenants (supernumerary)—Murdock Alexander Lindsay, gentleman. 5th February, 1914.

To be provincial Lieutenant (supernumerary)—Charles Albert Putlow, gentleman, 4th February, 1914.

George Edward Kidd, gentleman. 17th February, 1914.

To be Nursing Sister (supernumerary)—Florence Alexander Hunter. 1st February, 1914.

POSTINGS.

The following officers are posted for duty as stated:—

Lieutenant-Colonel J. A. Roberts reverts to the Regimental List from No. XIII Cavalry Field Ambulance.

Major W. A. Scott is detailed to command No. XIII Cavalry Field Ambulance, vice Lieutenant-Colonel J. A. Roberts, transferred to the Regimental List.

Captain W. H. Lowry reverts to the Regimental List from No. X Field Ambulance.

Captain J. L. Gilbert is detailed for duty as medical officer to the 9th Regiment "Voltigeurs de Quebec."

Captain J. L. Duval reverts to the Regimental List from No. VIII Field Ambulance.

Provisional Lieutenant (supernumerary) E. Tremblay is detailed for duty as supernumerary medical officer to the 18th Regiment "Franc-Tireurs du Saguenay," 1st January, 1914.

Provisional Lieutenant (supernumerary) D. V. Curry is detailed for duty as supernumerary medical officer to the 19th "Lincoln" Regiment.

Major W. L. Watt reverts to the Regimental List from No. XVI Cavalry Field Ambulance.

Captain C. A. Young is detailed for duty to No. II Field Ambulance and to be borne supernumerary to the establishment.

Provisional Lieutenant (supernumerary) S. R. Johnston is detailed for duty as supernumerary Medical Officer to the 66th Regiment "Princess Louise Fusiliers."

Provisional Lieutenant (supernumerary) J. C. McQueen is detailed for duty to No. XVI Cavalry Field Ambulance and to be borne supernumerary to the establishment.

Provisional Lieutenant (supernumerary) C. A. Publow is detailed for duty as supernumerary Medical Officer to the 16th Prince Edward Regiment.

Provisional Lieutenant (supernumerary) M. A. Lindsay is detailed for duty as supernumerary Medical Officer to the 1st "Halifax" Regiment, C.G.A.

Provisional Lieutenant (supernumerary) G. E. Kidd is detailed for duty as Medical Officer to the 5th Field Company, Canadian Engineers.

THE COLONIAL AUXILIARY FORCES LONG SERVICE MEDAL.

The undermentioned are awarded the Colonial Auxiliary Forces Long Service Medal, under the provisions of the Royal Warrant, dated 18th May, 1899, and General Order 132 of November, 1901:—

Lieutenant-Colonel W. H. Delaney, Army Medical Corps.

Major G. E. Beauchamp, Army Medical Corps.

CERTIFICATES.

The following certificates are granted:—
Lieutenant E. L. Stone, A.M.C., Captain.
Lieutenant G. E. Kidd, A.M.C., Captain.
Lieutenant F. S. Ruttan, A.M.C., Captain.
Lieutenant C. H. McDougall, A.M.C., Captain.
Lieutenant G. G. Greer, A.M.C., Captain.
Lieutenant J. A. Amyot, A.M.C., Equitation.
Lieutenant O. C. J. Withrow, A.M.C., Equitation.

Leave of absence, with permission to travel abroad, is granted as follows:—
Lieutenant E. E. Steele, A.M.C., one year from the 2nd January, 1914.
Major J. L. Potter, P.A.M.C., six months from the 1st October, 1914.
Provisional Lieutenant W. R. Jeffrey, A.M.C., three months from the 1st April, 1914.

MEDICAL EXAMINATION OF CANDIDATES FOR ADMISSION TO THE ROYAL MILITARY COLLEGE.

With reference to para. 9, R.M.C. Regulations, 1912, a Board of Medical Officers, consisting of the A.D.M.S. as President, and one officer, P.A.M.C. as member, will assemble in each Division and District, by order of the Officer Commanding, who will arrange the time and place and notify candidates to attend.

At stations where there is no P.A.M.C. officer, the Officer Commanding the Division or District may detail an officer of the A.M.C. to act as a member, with the pay of his rank while so employed.

In cases requiring special examination of the eyes, the candidates will be called upon, at their own expense, to furnish a certificate of an oculist recommended by the Board.

CARRYING OF ARMS AT CHURCH PARADES, ETC.

Militia Order 330, 1913, is hereby cancelled, and the following is substituted therefor:—

"It is notified for the information of all concerned that the carrying of government rifles by militia units, cadet organizations, and members of civilian rifle associations when attending church parades and other religious gatherings is contrary to regulations, and is to be discontinued. Side arms only are to be worn at such parades and gatherings, but in no case are swords or bayonets to be drawn on such occasions."

COURSES OF INSTRUCTION, 1914-15.

Permanent Force and Active (Non-permanent) Militia.

The following courses of instruction will be held during the period from the 1st April, 1914, to the 31st March, 1915:—

GENERAL INSTRUCTIONS.

A.—Officers. Active (non-permanent) Militia.

Provisionally appointed officers will be required to qualify within one year of their appointment.

The qualifying courses at Schools of Instruction are divided into several classes to enable officers to qualify for promotion, as follows:—

(1) Lieutenant's course. To qualify for the rank of lieutenant.

(2) Captain's course. To qualify lieutenants for promotion to the rank of captain.

(3) Field Officer's course. To qualify captains for promotion to field rank.

B.—Non-Commissioned Officers and Men.

Non-commissioned officers and men recommended must have completed at least 12 months' service in the corps to which they belong, and must have attended the last annual training of their corps; except in special cases, when the commanding officer will be required to add to his recommendation his reasons for selecting individuals who have not complied with the above conditions.

Each non-commissioned officer or man proceeding to join a school must be provided with a certificate on M. B., B. 362 from the officer commanding his squadron, battery or company; also a medical officer's certificate which must be produced on joining the school. The examination by the medical officer must be made within ten days of the date of joining.

(*A*) *At the Central Army Medical School—Ottawa.*

(1) *For Senior Officers.*—Instruction in Army Medical Staff duties in peace and war.

Duration of course—One month.

(2) *For Captains P.A.M.C.*—Instruction in practical hygiene, bacteriology and sanitary administration, previous to taking examination for rank of major.

Duration of course—Three months.

(3) *For Specialist Sanitary Officers*—Advanced instruction in public health laboratory work. Limited to one selected captain who has passed the examination mentioned in (2) above and is recommended for this advanced course as being specially adapted to be trained as a specialist.

Duration of course—Six months. (At the end of the course an examination will be held and successful candidates will be issued with certificates of "Specialist Sanitary Officers.")

(4) *For Lieutenants, P.A.M.C.*—Instruction in practical hygiene, bacteriology and sanitary administration before promotion to the rank of captain.

Duration of course—Three months.

(5) *For Sanitary Officers of the A.M.C.*—Instruction in practical hygiene, bacteriology and sanitary administration. Course open to officers holding Militia sanitary appointments or specially recommended in order to qualify for such appointments.

Duration of course—One to three months.

(6) *For N.C.O.'s and men, P.A.M.C.*—Instruction in duties of laboratory attendants and of sanitary inspectors. (*Vide* Standing Orders, P.A.M.C.). Course limited to 4 N.C.O.'s or men.

Duration of course—Six months.

Applications for any of the above courses will be forwarded through the usual channel to Militia Headquarters for approval.

(*B*)—*At the Summer School of Field Sanitation, Petawawa.*

(1) *For Sanitary Officers, A.M.C.*—Instruction in sanitary administration and field sanitation. Course open to officers holding Militia sanitary appointments, or specially recommended in order to qualify for such appointments.

Duration of course—One to three months.

(2) *For N.C.O.'s and men, P.A.M.C.*—Instruction in duties of laboratory attendants and of sanitary inspectors. (*Vide* Standing Orders, P.A.M.C.).

Applications for any of the above courses will be forwarded through the usual channel to Militia Headquarters for approval.

(C)—At Divisional and District Army Medical Schools.

(1) *For Majors and Captains, A.M.C. and Regimental Medical Services.*—Instruction in the subjects laid down in the syllabus for promotion, (K.R. & O., Appendix VI.)

Duration of course—One month.

N.B.—Promotion examinations to qualify for the ranks of lieutenant-colonel and major are held simultaneously twice yearly at divisional and district headquarters. The examinations are written and the papers are set and examined at Militia Headquarters.

(2) *For provisionally appointed officers of the A.M.C. to qualify for promotion to rank of Captain.*—Instruction in the subjects laid down in the syllabus for provisionally appointed officers (K.R. & O., Appendix VI).

Duration of course—One to three months.

N.B.—At the completion of the course an examination will be held, the papers being set and examined locally and certificates issued to successful candidates.

(3) *For N.C.Os. of the A.M.C., and Regimental Medical Services.*—Instruction in the subjects laid down in the syllabus for N.C.Os. qualifying for rank of sergeant.

Duration of course—Three months.

N.B.—At the end of the course an examination will be held, papers being set and examined locally, and certificates issued to successful candidates.

Applications for any of the above courses will be forwarded through the usual channel to divisional and district headquarters for approval.

(4) *Nursing Services, A.M.C.*—Courses of instruction for nursing sisters in the subjects laid down in the syllabus for Nurses, A.M.C. may be held at any military hospital at which a nursing sister, P.A.M.C. is stationed. When no such hospital exists in the divisional area or military district to which an applicant belongs, the application is to be referred to Militia Headquarters, Ottawa.

Duration of course—One month.

EQUITATION.

Equitation courses for officers and non-commissioned officers of the Permanent Force and Active (non-permanent) Militia to obtain equitation certificates, will be conducted at the following Schools of Instruction—

Royal School of Cavalry, Toronto, for 1st, 2nd, and 3rd Divisions.

Royal School of Cavalry, St. Johns, for 4th, 5th and 6th Divisions.

Royal School of Instruction, Winnipeg, for M.Ds., 10, 11 and 13.

Courses will commence on the following dates:—5th October, 1914; 2nd November, 1914; 30th November, 1914; 4th January, 1915; 1st February, 1915; 1st March, 1915.

The duration of a course will not exceed four weeks. Candidates may be examined at any time after the commencement of the course, as soon as they are prepared to undergo the examination, and discontinue the course if found qualified.

Candidates should report at Royal Schools before 9 a.m. on the dates above mentioned.

Meetings and Reports

On the Invitation of
The Government of the Dominion of Canada.
an
International Conference on City Planning
will be held at the
Convocation Hall of the University of Toronto
Toronto, May 25, 26, 27, 1914
FIELD MARSHAL H. R. H. THE DUKE OF CONNAUGHT,
the Governor General,
has graciously consented to open the Conference
on May 25, at 10.30 a.m.

PORT ARTHUR

By FRANK H. KEEFER, K.C.

As the meeting place of the Public Health Congress in September next is Port Arthur and Fort William, a short article descriptive of the former place has been requisitioned from Frank H. Keefer, K.C., one of its "old timers." Mr. Keefer writes that gladly will Port Arthur welcome the Congress within her gates and confidently will she expect that the members thereof will have a "Superior" time.

PORT ARTHUR is an interesting city. Well might it be—because it is built according to scripture. It is a "City set upon a Hill." It is founded upon Rock. Owing to its strategical geographical position, the winds and waves of adversity may beat upon her, but she will always (Phoenix-like) arise from the hard time and again go forward with the onward march of Canada.

When she was a wee small folk, the present Duke of Argyle, then the Marquis of Lorne, one of Canada's most popular Governors-General, visited the place then called "Prince Arthur's Landing," and prophetically christened her "The Silver Gateway." Silver is the right simile to use when looking at the smiling landlocked waters of Thunder Bay washing the rocks upon which the city is built—waters shining in the sunlight like burnished silver. Or, again, when sitting upon her terraces and looking over the same waters shining under the moon as a smooth sheet of silver; or when touched by the breeze like the "spear points of Galilee."

Were his Grace of Argyle to revisit Port Arthur during the summer or fall and see millions of bushels of grain passing through the elevators to ships and sailing away to the markets of the world,

it is likely that the adjective would be changed to "golden" from the golden stream of grain. But, whether the golden gateway or the silver gateway—a remarkable gateway it is, and wonderfully situated upon terraces or hills overlooking a bay that is often likened in beauty to the Bay of Naples.

Being well oriented, Port Arthur gets the full benefit of nature's effects from sun or moon lights. Facing to the south and east, with the hills rising behind her to the north and west, she sees all the glories of the sun and moon rising over the sleeping Giant and touching in a peculiar manner the waters and hills surrounding the city with opalescent tints. Then again in the summer evening, when the sun is setting, turning the cliffs pink or golden, and the evening showers come, the rainbow (and sometimes the double rainbow) is thrown in the east over the waters of Thunder Bay, with Thunder Cape or Pie Island (cliffs over a thousand feet high) in the centre of the arch, forming a picture, which, if painted on canvas, would not be credited as real, but idealistic.

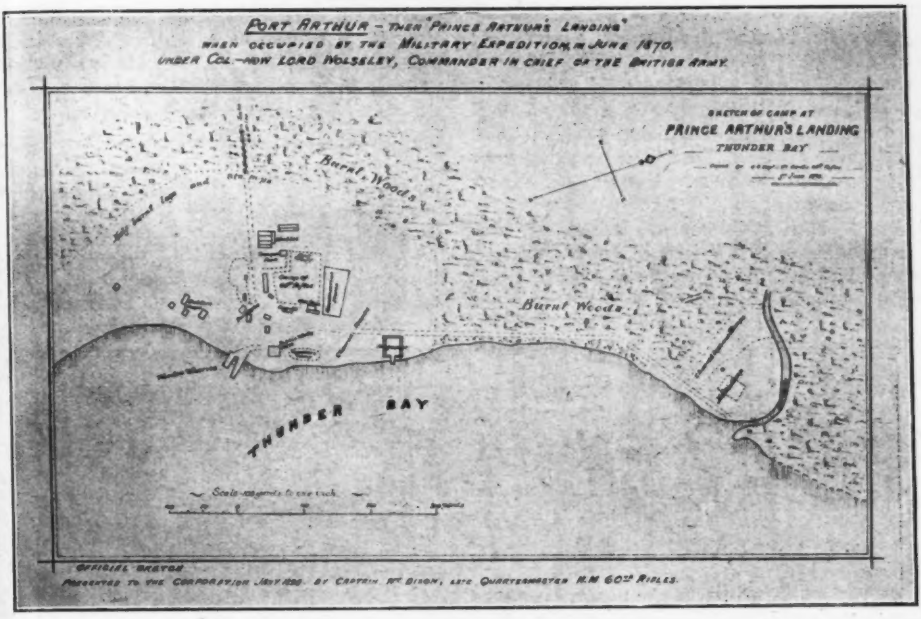
She undoubtedly is a beautiful city and as nature has done so much, man is trying to do his portion. With this in view, the Port Arthurites have been paving and improving their city and developing all their public utilities until its reputation in this respect is spreading rapidly. She was the first town in Canada to build, own and operate her own electric light, street railway and telephone systems; and also to acquire municipally a large area of land upon which to hive all of her industries, such as ship yards, etc., and so separate manufacturing from her commercial and residential life.

It is often asked why the name "Port Arthur." This brings up interesting touches of Canadian history. After the purchase from the Hudson's Bay Company by Canada of the Great Heritage, which we now roughly call the North-West, some means of communication was required with this unknown land. The Dominion Government first decided to build a wagon road from the shores of Lake Superior to the inland waters of Lake Shebandowan and connecting rivers and lakes, and then over the portage on the height of land with the waters flowing north to the Hudson Bay, and so to reach Fort Garry (now Winnipeg), and from there over the vast prairie country.

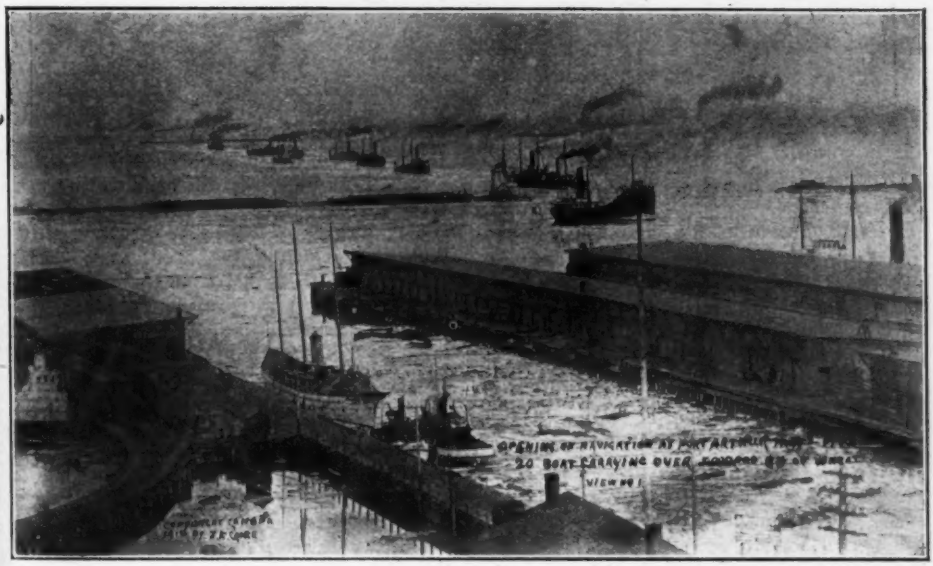
One of Canada's able and upright men was put in charge, S. J. Dawson, C.E., with the result that in due course was developed "the Dawson Route," commencing with the Dawson road leading from the Government dock at the foot of Arthur street, up and "over the hills and far away." At that time Fort William was the only settlement in that district. This fort being on the Kaministiquia River, and in the valley thereof, the ground was deemed of too low a nature to build a good wagon road at a reasonable cost. Mr. Dawson, therefore, went along the shore line of Thunder Bay, three or four miles east, and picking out high ground chose the terminus of the Dawson Road. Ground was cleared and the right-of-way through the forest was cut. This necessarily developed a settlement where the supplies and material were off-loaded from the steamers or sailing vessels. This place received the name of "The Landing."

Such it was when Louis Riel in 1870 decided to resist the assertion of Canada's jurisdiction in the West. After the arrest of Dr. Schultz and Thomas Scott, and after Schultz escaped and Riel decided to go through the form of a court-martial and ordered Scott to be shot and so murdered him, Riel realized he had aroused the East to decided action. There then was organized the first Red River expedition under the command of Sir Garnet Wolseley, afterwards Lord Wolseley of the Egyptian campaign fame. Naturally the route for this expedition to take (not being allowed to pass through the United States territory) was the Dawson route. Landing his troops at "The Landing," and starting them off on the march over the Dawson Road, he sent his boats especially built for the rapids and inland lakes up the Kaministiquia River, across by Dog Lake to Savanne on Lake Shebandowan. At this point the troops embarked in the row boats and made the water journey (with portages) through the Rainy river county, the Lake of the Woods district and on to Fort Garry, arriving there only to find Riel had fled.

A STRIKING CONTRAST



TH EN



NOW

This remarkable campaign and journey, was conducted without the loss of a single life, and for which great credit should be given to Mr. S. J. Dawson, who had charge of all the route details. The recollections and experiences of this expedition led to its duplication by Lord Wolseley on the Nile expedition to Khartoum to try and rescue Gordon. Canadian voyageurs again were asked for and successfully used.

One of the regiments of the first Riel expedition was "Prince Arthur's Own," named after our respected Governor-General, Prince Arthur. Then it was that "The Landing" was changed to "Prince Arthur's Landing," in compliment to this regiment and its namesake, His Excellency. This name was retained till 1884, when, owing to the growth of the place, it became necessary to incorporate it as a town, and the present name, "Port Arthur," was chosen by the inhabitants, who desired to link its destiny with the present Governor's name. Upon its incorporation as a city a few years ago, this name was still retained. When it was chosen, it was not expected that its Godfather would become the Governor and Official Head of the Country. His wise and faithful performance of his duties, together with his grace and statesmanship, have made Port Arthurites proud of their name and they are glad to look to him as their Patron Saint.

An important factor in the history of Port Arthur was the construction of the Canadian Pacific Railway. When the first railway was outlined, its terminus was what is known as West Fort William, or "The Town Plot," seven miles away.

Even though this railway was first intended as an amphibious route, half rail and half water (afterwards changed to all rail), the Landing people did not like being side-tracked, and conceived a remarkable scheme, viz., the building of seven miles of railway, thus connecting with the then terminus and presenting same to the Government free of cost, thus shifting the terminus seven miles east. This was carried to completion against opposition even from the Government.

After the defeat of the then Government in 1878, in which photos of the Neebing Hotel and the steel rails on the Government dock at West Fort William played an important part, the policy of the through Transcontinental Railway was adopted, and the construction of the Lake Superior Division was started.

Prior to the completion thereof, the second Riel rebellion broke out in the eighties. Troops again were sent West, this time marching over the gaps around

the north shore of Lake Superior. After the trouble was over and Batoche and Cut Knife had been fought and Riel captured, the troops returned by embarking in vessels at Port Arthur, thus avoiding the tiresome gaps on the North shore.

Now, these gaps are crossed in comfortable sleeping, dining and observation cars. Shortly also will the trains of two other transcontinental lines be operated north of Lake Superior, thus linking together East and West by three separate pairs of steel bands.

Alongside of Port Arthur, with boundaries coterminous under the shadow of Mount McKay, and upon the banks of the Kaministiquia River, nestles the City of Fort William, with all its historical associations of the rival fur trading companies and Lord Selkirk's days. These two cities are interlocked in interest and are bound in due course to become one. When they do and fufil their destiny, they will be recognized as one of the future big cities of Canada. Rapidly have they grown to the forty thousand mark. Rapidly with the onward march of the North-West will they grow and become a great bulk-breaking point in the interior of the North American continent and so be the city at the head of the Unsalted Seas.

FOURTH ANNUAL CONGRESS

— OF THE —

CANADIAN PUBLIC HEALTH ASSOCIATION

FORT WILLIAM - PORT ARTHUR

1914—SEPTEMBER, 10-11-12—1914

? ? Ethics ? ?

These two pages were photographed from a prominent Canadian weekly Religious Journal. You will see that on the one hand the Editor in his own column tells us not to be blinded in temperance reform by the "Almighty Dollar," while on the other hand the lure of the "Almighty Dollar" causes the Business Manager to insert advertisements for which there can be no excuse or justification. Notice "Hully gee." Think of its derivation. Surely the religious journals in the Dominion, above all others, only need this object lesson in order to cleanse their pages, stopping for all time the endorsation of this abominable practice.

In the days of John the Baptist, when crowds sought his ministry and many were prepared to proclaim their entrance into the Kingdom through the significant rite of immersion, the great herald and evangelist made it clear that works meet for repentance were necessary, saying to Pharisees and Sadducees who requested baptism at his hands: "Now produce fruit that answers to your repentance." And with similar language he addressed the tax-gatherers and soldiers who would follow him. It need not be thought strange, therefore, that in these days a thief, brought through the preaching of the Gospel into the light and life of the Kingdom of God, should have the desire to confess, not only sin in the abstract, but particular sins committed by him against God and society. This was done a few days ago in one of our Canadian cities, the repentant thief giving himself into the hands of the police on the score of a crime committed several years before. What the result will be we do not know; one thing sure, however, a repentant sinner, with a purged conscience.

If the liquor traffic we must endure, it should be at the expense of those who make and sell and buy the ruinous commodities of the traffic. We are firm believers in high license. The manufacturer, seller and buyer of what produces such wide and deplorable havoc among individuals, homes and communities, should be compelled to pay in the coin of the realm very dearly for their privileges. And we suppose that, things being as they are, the Provincial Treasurer could honestly point with pride to the fact that $700,000 or $800,000, since 1904, marked the advance to the revenue from the liquor trade. The revenue from liquor licenses in the Province of Ontario for the year 1913 was $901,486.03—a large sum of money. But we hope that no temperance man or woman who has the real welfare of the citizens and country at heart, will be blinded in this connection by the almighty dollar. The Province would be immeasurably better off along many lines were it in a position to decline the manufacture, importation, sale and buying of liquor within its bounds at any price.

Mar. 12th 1914

Magnifying Misery Into Joy

Dyspeptics, Stomach Sufferers and Appetiteless People May Quickly Find Relief in Stuart's Dyspepsia Tablets.

When a stomach sufferer gets relief he is one of the happiest of human beings and he looks back at his old self with a distinct feeling of horror.

Stuart's Dyspepsia Tablets quickly readjust the out of-proportion stomach and digestive machinery, and bring joy of life and love for food to the man or woman who will use them after each meal for a short time.

"Hully gee, I used to feel just like that fellow."

The action of Stuart's Dyspepsia Tablets is a purely natural one. When taken they enter the stomach just like food. They mix with the juices of the mouth. Then they enter into and correctly build up or dilute the juices of the stomach, go into the intestines, and there when the nourishment from food is taken into the system so follows the ingredients of these wonderful tablets.

They correct the faults of the blood and thus at the next meal the body is better able to produce a stronger and more normal digestive juice.

A short use of these tablets will re-establish your digestion, stop gastritis, heartburn, indigestion, foul breath, catarrh of the stomach, and do away with dangerous stomach ulcers and many other unbearable conditions.

Go to your druggist to-day and begin the Stuart's Dyspepsia Tablet habit. It is the habit of health and appetite. Learn how to yearn for food, not how to spurn it.

Obtain a box from any druggist—price 50 cents. Sold wherever you can find a drug store.

For Over 60 Years

Mrs. Winslow's Soothing Syrup

has been used for over FIFTY YEARS by MILLIONS of Mothers for their CHILDREN while TEETHING, with perfect success. IT SOOTHES the CHILD, SOFTENS the GUMS, ALLAYS all pain, CURES WIND COLIC, and is the best remedy for DIARRHŒA. Sold by Druggists in every part of the world. Be sure and ask for Mrs. Winslow's Soothing Syrup and take no other kind. 25 Cents a Bottle.

An Old and Well-tried Remedy

Improve Your Eyesight

Eyeglasses May Be Abandoned

A Wonderful Treatment That Corrects Afflictions of the Eye Without Cutting or Drugging.

There is no need of cutting, drugging or probing the eye for the relief of most forms of eye trouble, for the wonderfully successful "Actina" treatment, based upon correct principles, has been discovered which eliminates the necessity of such methods. There is no risk or necessity of experiment as many people report having been cured of failing eyesight, cataracts, granulated lids, and other afflictions of the eye after other treatment failed.

Rev. Geo. B. Fairhead, New York Mills, N.Y., writes: "A Notedoculist examined my wife's eyes, and said cat aract was apparent in both organs. By the use of Actina her sight has become clearer and stronger, and the use of Actina is a constant comfort to her eyes and ears. We would not be without it."

Rev. N. P. Uhlig, 2014 Cortez St., Chicago Ill., writes: "By the use of Actina my eyes have grown strong. You can use my name for reference."

Rev. J. S. Boyd, Courtenay, N.D., writes: The use of the 'Actina' has brought my eyes to a very satisfactory and comfortable condition. I can read all day and all night if necessary without discomfort. 'Actina' also stopped head noises, and relieved catarrh."

"Actina" can be used with perfect safety by every member of the family for afflictions of the eye, ear, throat or head. A Free Trail of the "Actina" is given in every case.

Send for FREE TRIAL offer and valuable FREE BOOK. Address, Actina Appliance Co., Dept. 43V., 811 Walnut St., Kansas City, Mo.

CANCER FREE TREATISE The Leach Sanatorium, Indianapolis, Ind., has published a booklet which gives interesting facts about the cause of Cancer; also tells what to do for pain, bleeding, odor, etc. Write for it today, mentioning this paper.

OVERWORK AND MENTAL STRAIN

Causes run-down health and sickness.

Scott's Emulsion and *rest* are needed, but *SCOTT'S EMULSION* is more important because it enriches the blood, nourishes the nerves—builds the body and restores strength, vigor and immediate energy without interrupting daily duties.

Scott's Emulsion drives out colds and strengthens the lungs.

Scott & Bowne, Bloomfield, N. J. 12-100

Veterinary Hygiene

THE VETERINARY PROFESSION IN ITS RELATION TO PUBLIC HEALTH

By ANDREW R. B. RICHMOND, V.S., B.V.S.C.

Chief Veterinary Inspector Dept. of Public Health
Toronto

I PRESUME the primary object of our Association is to promote the welfare of the profession to which we belong, to consider and devise through interchange of ideas between those members engaged in the various special branches of our work, ways and means by which we may increase our utility to the greater community of which we form so small a part.

With this idea in mind, I submit the following brief remarks, with the hope that as a result of discussion of them, some recommendations may be brought forward and presented at those quarters where they may take effect, or that at least the matter of the duties of the veterinarian in public health work may be a little more fully realized than hitherto.

Our profession was founded, and our teaching has been directed up to comparatively recent years, on the assumption that the main if not the sole duty of the Veterinary surgeon was to perform the ordinary work of a physician and surgeon to the lower animals. We have outlived this idea, and the future of our profession will largely be concerned with preventive work and service in relation to the public health. On this account I am particularly optimistic regarding the future of our profession in Canada.

Agriculture is steadily progressing. Horses, cattle and all live stock are of more value now than ever before. Greater attention is now being paid to the breeding and rearing of live stock. The people are better informed and educated upon such matters, and the result must inevitably be that they will avail themselves more of expert help.

The surgeon's skill in operative surgery, capability and ingenuity in the diagnosis and treatment of disease are what are now respected, and the surgeon himself should take every opportunity of educating his clients that his help is valuable, by the adoption of the most scientific methods of dealing with his patients. With the spread of education there shall be many appointments in connection with public health work, and if for no other reason than to organize for the purpose of securing such appointments as are ours by rights, every member of the profession should be a member of a Veterinary Medical Association.

I can assure you, we require the best men and brains if we are to keep pace with the times, and if we are to uphold our claim for recognition with the medical profession and other public health organizations.

Public health in its later developments has realized that it could never hope to satisfy its aspirations by the mere prolongation of the existence of the more favored members of the community, or be content simply with the suppression of communicable diseases, but now aims rather at securing those conditions of the health of a community which shall enable it to display the utmost activity of its physical and intellectual energies.

Its greatest justification lies in increasing the health and powers of the workers, and especially of the industrial classes, those less able to help themselves.

The question has often been asked me—What has the veterinarian to do in connection with public health? My personal opinion and answer to that question is that

there should be no more useful and valuable member in the public health service than the broad minded veterinarian, who has made some study of the many inimical factors and influences bearing upon the health of the public, and who realizes fully the importance of the particular work which veterinary science is called upon to perform in guarding the health of the people from dangers arising out of relationship between man and the lower animals.

Communicable diseases due to biological causes claim first attention, and prophylactic measures for their suppression take precedence in the health administration of a community.

Has not our profession a wide range of work to perform in this regard? No one who has the slightest knowledge of the subject can gainsay the fact that it most assuredly has. It has already been recognized by the most enlightened public health authorities in Canada that our department has distinctive and important work to do and there is ample evidence that a still greater call will be made upon the profession in the future.

Inestimably valuable work has been carried on for years in combating the communicable diseases of animals, by the Health of Animals Branch of the Federal Department of Agriculture, and a measure of protection has been afforded the public in certain localities from the consumption of unsound meat, but a great deal yet remains to be done, and I think it is now time for the various Provincial Governments and municipalities within the Provinces to take up and carry on the work of protection of their people from the dangers arising from sources with which the veterinary profession can best deal.

Various degrees of legislation and regulations respecting the inspection of animals, meat, milk and other foods have been provided, but from our standpoint there is yet room for further legislation and amendments before satisfactory results can possibly be attained.

Under present conditions, is it surprising that such extraordinary actions are at times taken where matters pertaining to our work are concerned, that such peculiar appointments are at times made, and that unqualified men are permitted to pursue work of which they may possess only a dangerous amount of knowledge?

To me it is in no way surprising, for I believe that in many cases the appointments made and actions taken, are due to a lack of guidance from the proper source namely the veterinary profession.

During recent years subjects have been added, and curriculam of the pregraduate courses, and postgraduate courses have been instituted at a large number of veterinary colleges in order to meet the increased requirements which will be demanded of us in matters of public health, and there is no doubt but that as time goes on additional subjects will be taken up and more attention and time devoted to the subjects at present taught.

Universities have evidenced their willingness to grant degrees in veterinary science, and some of them are now conferring degrees in veterinary public health. In 1912 the Canadian Public Health Association established a Section of comparative pathology and veterinary hygiene, thus recognizing our profession and affording the veterinary surgeon one of the few opportunities of appearing along with the M. O. H. and other sanitarians to demonstrate his fitness to take part in public health work. These are a few of the factors which have imbued my mind with the belief that there is a great field of work open to, and a duty imposed upon the veterinarians of the future. Recognizing, as we surely all must, the significance of the work, and that our services are essential to the efficient performance of the duties of a department of public health, coupled with the fact that still further obligations and responsibilities will be placed upon us as a profession, the question arises: What must we do to justify the trust placed upon us, and how can we influence public opinion to a more speedy appreciation of our usefulness to the community, and how secure proper conditions of service and a still higher remuneration?

By effective professional combination and observance of professional ethics.

By grasping every opportunity of educating ourselves generally, as well as along the particular line of work in which we may be engaged in order that we may be

able to take our share of public administrative work when the opportunity presents itself, as I feel sure it will.

By submitting comprehensive reports and recommendations to the proper authorities when we consider that we are justified in so doing from our knowledge of the subject, and that if adopted our advice will rebound to the advantage of our department, the public and our profession.

By willingness to co-operate with or assist in any way, other public health officials and by retaining the constant idea that our object should be the same whether general practitioner or public health veterinarian—the uplifting of our profession and the enhancement of the utility of its work.

By advocating and insisting if possible upon every available opportunity that only men with the highest standard of practical and technical education obtainable under present conditions are appointed to public health positions.

I am well aware of the regrettable fact that at present a great many people, and even veterinarians, regard the man engaged in the veterinary inspection of meat, milk, or other public health work as a person of inferior professional ability who for some reason or other is not fit for any other work. That this idea, although absolutely erroneous, is not without some degree of justification I will not deny, and that there are reasons for it I know.

The lack of inducements in the past is probably responsible for the fact that more of the best men in our profession in this country are not engaged in public health work; but, has the importance of our work been impressed sufficiently in the past upon those whose authority permits them to make appointments? Perhaps it is that just at present the supply is greater than the demand, but it will not be long so, and by professional combination, higher education, with naturally corresponding higher ideals, we may anticipate better conditions for all with a greater number of the best young men entering the field of public health work, and the placing of our profession upon a common plane with other professions, which have for their object the preservation of the health of the public.

There appears to be an idea that by demanding a higher standard of preliminary education in the prospective veterinary student, there will be a danger of diverting many desirable young men to other lines of work, and that those who graduated under higher education would be so to speak "Choke full of theory" without any practical knowledge based upon experience. I cannot agree with this belief.

That there are many able men in ours and other professions who had not the opportunity of any great preliminary education some years ago, and who have by dint of study and hard work educated and made names for themselves, we all know. But times have changed, and a young man who now-a-days intends to enter any of the professions has ample opportunity of acquiring a fairly high standard of preliminary education.

It is far from my desire to criticize any system of education. I am not in a position to do so, and to enter into the subject of or discuss the advantages of higher education is not my intention. I simply touch upon this question, as I conscientiously believe that it has at present and will have in the future a great influence upon the standing of the veterinary profession.

We, as veterinary inspectors of the department or public health of the city, and indeed the whole profession, are fortunate in having an executive officier in Dr. Hastings, a man who has already fully realized that the work of his department along certain lines cannot be efficiently carried on without our help. There are eight qualified veterinarians in our department at the present time, four engaged in the inspection of the sources of Toronto's milk supply, and four engaged in the inspection of food animals and meat prepared for food within the city. As I have been personally connected with the work of the latter division for the past three years, a short account of our work may not be out of place. This I shall give in the June issue of this Journal.

For several years prior to 1911 this work was carried on by Dr. Saunders alone, who did most valuable work in laying the foundations.

GINGERING UP THE SALES FORCE

By TIM THRIFT

(Concluded from the April issue)

The automobile contest closed with February. It was a hot finish; the last two months of the series broke all Company records. January showed an increase of 35 per cent., but February went better with more than 44 per cent. These figures refer to increase over corresponding months the year previous. February business was so large that, even with the handicap of a short month, a new record for all months was established. The automobile was won by a salesman, with a division manager close behind him. He maintained an average per cent. of 147.5 of his Quota for the six months of the contest and was so keen to win that he worked at times when the ordinary man would have been in a sick bed. And the surprising fact of his record was that he did not start after the prize until two months of the contest had passed. Thus he put in but four months against six of his competitors. This salesman did not work to win the automobile. I think he was proud to win such a prize, but back of his efforts was the incentive of being the leading man in a large organization of keen salesmen. It meant far more to him to have such prestige than to receive a prize for his work. Therein, in fact, lies the value of contests in any sales organization. Harping back to a previous statement, it is just simply the application of the games of boyhood to the efforts of man's estate. A boy was content when he became the acknowledged leader of his comrades; so a like feeling in man. It is inherent and natural like.

The finals of the automobile contest were not announced until March 8th, owing to the care that was taken to have the figures for the six months absolutely accurate in every way. A new contest was announced, however, a week before the other closed.

This new contest came about in an unusual way. Then men in the field were behind it. A committee of three managers sent out a letter to all division and branch offices asking what they thought of the idea of making the month of March a "Jarrett" month. If the idea was acceptable to them they were to send a night lettergram, so that it would reach the desk of Mr. Jarrett, sales manager, on March 1st. Every manager endorsed the stunt. The assistant sales manager and I myself were in on the scheme, but the general sales manager knew nothing of it. When he came down to the office on the day fixed he found piles of lettergrams waiting for him, with more coming in every few minutes. Before the day was over, there was a lettergram from every manager in the organization. The tenor of these was that March business was made complimentary to him, and that he agreed to let the men make it so.

A specially fine issue of the House Organ was put out. This had a cartoon on the first page, showing the general sales manager sitting at his desk literally snowed in with lettergrams.

This was followed by a general article on the stunt. In this came all telegrams received with text matter of each in full. A letter of acceptance from the general sales manager and announcement of two special prizes for March business.

The prizes were selected after the organization pulled off their surprise. It was decided to give them as an extra incentive, and as it happened circumstances came just right for a new plan of contest to be put into effect. This was to have a contest separate, so as to make every heat a race. The contest prior to Jarrett month had been of six months' duration. It had been found necessary in long contests to have smaller ones in between to keep up the interest—was it not well to make all contests short and keep up a continual interest? This plan, too, would have the advantage of change to the men and create new enthusiasm. So the March contest was adopted as the first of the new monthly contests, and handsome diamond scarf pins offered as prizes to the division sales managers, branch sales

managers and salesmen. A Parker fountain pen was offered as a prize to every man making his quota. The quota of division and branch offices was changed as it was found advisable. The organization went into the new contest with vim. It was distinctly their contest. They had proposed it. Theirs was the job of making a success or failure of it. The original committee which started the scheme kept the mails busy with personal messages. The advertising department co-operated with them, and kept up a bombardment of matter into the field. Every manager and salesman was keenly alive to what was expected of them. They knew that their associates on the sales force would expect the best that was in them and be content with nothing less. Moreover, they realized that they had an opportunity to express most tangibly the real affection they felt for their leader. They did not work for mere dollars, but for the higher motive of personal regard for a man. Anyone can get salesmen to work for him for money. That is simple. But when the relationship of one man with another, employee and employer, can be brought to the basis of a personal equation the possibilities are boundless.

Money gets but a certain service from any man. An appeal to his higher senses through the square deal gets every ounce of his effort. All successful sales managers have the ability to get into the hearts of their men and secure their unwavering loyalty.

"Quota Quick" got busy last part of the month and sent out his post cards.

The extract from the April 5th issue of the House Organ speaks for itself, and is evidence of what was accomplished through the Jarrett month. March was the biggest month in our history; 16 per cent. over the highest previous month's business, and 30 per cent. over March of 1911. It was a remarkable tribute from a sales organization to a general sales manager, yet one which was but natural coming from a sales force which had accomplished much through contests.

The same issue of the House Organ announced another of the monthly contests. This was in line with the new policy to have the contests closer together; hence followed immediately upon the conclusion of the March one. One of the best ways to reach a man's heart, to get his enthusiasm and co-operation, is to get to the power behind the throne, his wife. Hence the April contest was dedicated to the ladies, and this slogan adopted, "Work for fair for the fair." The salesmen up to this time had been working entirely for themselves. So advantage was taken of the April fool custom and a lettergram sent out announcing that the company would fool them this time and give the prize to the ladies.

The House Organ announcement followed this very closely. The men jumped at the offer; it meant working for another. They could be both unselfish and selfish. They had the primal instinct to make a good showing in the eyes of their loved ones. The women were equally enthusiastic; they had confidence in their individual champions. Hope and encouragement they gave, but pity the unfortunate who came home at night without a favorable report. This was their contest, and they early resolved that there should be no let up on the part of their representatives until the finals were in. With the House Organ coming weekly as a constant reminder, and with a partner at home no longer a silent one, there was every incentive to get busy and keep busy. The whole sales organization as one man did this very thing. It was not conducive to peace of mind to do otherwise. The editor appealed to the managers' wives for an expression on the contest and secured many good letters, which were printed in full in the magazine. "Quota Quick" got busy and produced his wife.

This was the first introduction of "Mrs. Quota Quick" to the organization, and they hailed her with delight. As the contest neared its close, she got a special post card in imitation of her famous husband.

With all these forces at work and the good psychology of the stunt, it was not surprising that the month closed with an increase of 20 per cent. over April of the previous year. And again it was demonstrated that knights of old have nothing on the chivalry of the modern business men.

From the close of the April contest the organization was given a little rest on contests. It was not until the latter part of June when sales began to slack up that

another was introduced. At that time the need was seen for something to ginger up the business, and a fishing contest was decided upon. The opportunity came to make such a contest timely, because the general sales manager, with two other home office officials, went on a fishing trip in Canada. Hence this theme was of universal interest. "Your general sales manager has gone fishing; we are left to run the business while he is away. Let us go fishing ourselves and show him a thing or two."

The contest was announced in a special issue of the House Organ, which came out June 21st. A cartoon showed all of the officials fishing, with the slogan, "The business sea—what will your June catch be?"

As the month was nearly closed, the organization was told that the contest would date from the first of the week instead of the end, when it was announced. To show where the fishermen were a string of fish was printed, with percentage quota made to date, and graded according to the size of the fish. For instance, the office which had the largest per cent. was indicated on the largest fish on the string.

The contest was taken up enthusiastically and undoubtedly saved the month, as a nice increase over the previous June was shown at the close. This contest was based on the understanding that all men enjoy best that which they participate in. Not having a fishing party of their own, they could actually participate in their general sales manager's party and vacation without leaving their territory. This thought of participation is one to bear in mind when planning a sales' contest. It goes back into the primitive in human nature. Many vaudeville stunts are successful because of it. They get the audience to help in carrying them out and create an interest which could not be secured otherwise. Those of you who saw Peter Pan remember how frantically you waved your handkerchief when bidden that you might save the fairies from the pirates? It is a theatrical use of the idea of participation.

Some of you in hearing of these contests may be constrained to say: That is all very well, but we could not work special stunts in our business; our sales force is too small. How do you know you can't? Have you ever tried them? And you may reply, No; we have only 10 or 12 salesmen, and such efforts would appear ridiculous to them. Fiddlesticks! Sales schemes and plans are as applicable to a small sales force as to a larger one, with certain contraventions. Human nature is the same the world over. You can work as effectively with a few men as with many. Perhaps more so, because you can get even closer to them and come to understand them and their foibles better. In every concern, there must be a perpetual fund of enthusiasm. It is well if the general sales manager be that fund, but not essential. Some mighty competent sales managers are not of the type that effervesce. They are too good sales generals, however, not to appreciate the value of that enthusiasm in their work, and so they have a man or men with them who furnish that particular kind of energy. In adopting such a power plan of energy, it is well to bear in mind that there are two kinds. One furnishes a strong power current of high voltage that turns things and the other consists principally of froth and hot air. Enthusiasm of the right sort cannot be manufactured and provided successfully. The source from which it emanates must be natural. The man himself must be of an enthusiastic temperament. He must be naturally boyish and optimistic. He must possess that peculiar thing we call "ginger," which makes him what we call a "live wire." Manufactured enthusiasm is short lived. It has a false note in it, which those whom we seek to inspire are quick to detect. They soon perceive that it lacks earnestness; that the source itself is of little faith. Hence instead of working good it works harm, in creating an insincere atmosphere which brings with it a distress which is invariably disastrous. But once let real enthusiasm take hold and it sweeps all before it. It is the greatest single force in getting the most out of a sales organization, for it puts new confidence into the men. It instills fresh courage; it creates new heart. One medium for the dissemination of real enthusiasm is a good house organ. The important part played by our House Organ in connection with the contests which have been described must be fully appreciated

by everyone here. This House Organ is unique in many ways, and a description of it and the manner in which it is conducted may be interesting.

The name of the publication is the "Ginger Jar," as you have noted. It is issued weekly, or oftener if occasion demands, and its distribution is confined to the sales forces of the company on account of the confidential information it frequently contains. In size it is 8 x 12 with cover, and it contains never less than eight pages, and frequently more. The page matter is set in Remington type. It is printed entirely on a Multigraph, and it is this fact which makes it possible to get out a special edition so quickly and economically; in fact, able to produce an issue in a single day.

In addition to giving the standings of various divisions and branch offices and salesmen it prints sales stories of experience, interesting personal items, ginger-up matter, and keeps the men informed of developments in manufacturing as well as advertising. The House Organ is edited in the advertising department, but its contents are passed upon by the sales department. This is as it should be, for the publication is distinctly for the sales force and has a very important bearing on sales.

As an illustration of the special matter which is run from time to time, I will give the following parable. A series, of which this is one, was started some time ago by me, when I wanted to get some particular point across, and realized that preaching would not bring about the desired result. This is the parable of "A Seat Warmer who became a Sole Leather Scorcher."

"Once upon a time, recently, in fact, so to speak, there was a gifted salesman who had a fashion for keeping the seat of a chair in warm condition, twiddling his thumbs and dreaming beautiful dreams of what the morrow would bring forth. He kept bank president hours and seldom stirred from the office for fear of frost bite in winter and sunstroke in summer. He was the original Little Bright Eyes when the mail came in, because the Home Office was his one best bet as a prospect producer. What was handed him he took with languid interest in life, and if his breakfast sat well, weather was good and his inclination felt the need of a little exercise, he would make a call or two in anticipation that luck might fall his way and hand him something without the necessity of exertion on his part. It was a fair, fair life for a man of his capacity. Others might skirmish and scent prospects, but not he. What was the use when his concern was spending lots of good money to make it easy for him, and some business had to come in. True, there was a prospect in every block, but why irritate them by being insistent. Some day may be they would see an ad, and write in for information, so he got to them eventually anyway. To him there were drudges in the organization and they were all willing relatives of his. But it came to pass that one day about noon he read a little parable like this, and he saw a great light. Then it was he realized the opportunities all about him and his place in the sphere of usefulness. 'Woe is me,' said he in tones of great anguish, 'for this advertising is the sun that has been ripening the plumb for the picking, and lo! I have not been there with a basket. There are business men in this city who are drooling at the mouth for what I have to sell, and I have let them drool. No more for mine! Hereafter I will hit the pipe prepared by my own initiative and become a sole leather scorcher instead of a seat warmer. It is me for the development of business of my own making and co-operation with the advertising campaign. Henceforth I will be in the vanguard of the fight and no longer a private in the rear ranks.' So it was that he punched out the seat in his office chair that it might no longer be a temptation and hit the pipe for further orders.

"So it was also that his sales soon looked like an estimate of Morgan's fortune, and he wore diamonds on his little fingers. Moral: It teaches that chair manufacturers are the curse of salesmanship. And that the shoe industry should have a subsidy."

The men were quick to see the points in the parables, and they felt no sense of having been preached to. The same points might have been made in straight reading articles, but these would probably have been passed over without leaving any impression. Mixing a little hu-

mor with the plea caught their fancy and got their co-operation.

An important factor in making a successful sales House Organ is to secure the co-operation of the sales organization in editing it. The most interesting material to salesmen are experiences of other salesmen. They like to read how the other fellow got one over him; what he did under certain circumstances and the arguments he used to win a prospect, but such material is difficult to secure in most organizations. Salesmen are diffident about writing of their own work; they are afraid others may think they are playing to the gallery. This is overcome in the case of the Ginger Jar by writing many personal letters and including in each copy of the magazine Ginger Jar news a form. This form makes it convenient for men to jot down anything fresh in their minds at a time when the thing is before them. The general sales manager also contributes much live matter by watching his correspondence and passing any good stuff along which may come in the general mail. The success of the "Ginger Jar" in keeping the sales forces gingered up can be attributed largely to the fact that it has practical, original matter relating to the business and personal affairs of the men and that it is kept up to the minute. The co-operation between the advertising and sales departments of our company is very close.

You will grant without question that this co-operation is advantageous, but you will rarely find an organization so conducted. There is generally a line of clear demarcation between the two. How much better the other argument is and how much more proper that the advertising man should help originate and carry out sales schemes in connection with his regular work. More and more are large concerns coming to see that this is true, and they are dovetailing the two departments and the work of their heads. The sales manager who finds the advertising manager of his firm taking a keen interest in sales problems should welcome that interest. Advertising men will bring fresh eyes to bear on the work and offer valuable suggestions for increasing sales. Advertising managers, too, will welcome the interest of sales managers in his work, for he will look on advertising problems with a different view and offer many suggestions from his experience, which will strengthen an advertising campaign. On these two men should be put the responsibility for the business, but with that responsibility should go authority to act on their own initiative and work out their own salvation. And blessed are those executives who are on a basis that permits them to share in the business they create, for, verily, they will go out and clean up the earth.

MENTAL BLIGHT.

Idleness.

Diagnosis—

Idleness is costly without being a luxury. It is hard work for those who are not used to it, and dull work for those who are.—Horace Smith.

Remedy—

Be counselled, ascertain if no work exist for thee on God's earth, if thou find no commanded duty there but that of going gracefully idle.—Carlyle.

Trained Leadership in Health Administration.

Health administration in this country lags largely for want of trained leadership. The call to public health is loud and clear. Preventive medicine is the watchword of the hour and the people are asking: "If disease is preventable, why is it not prevented?" They are not satisfied with promises, but demand results; this is at it should be. It is now recognized that the orthodox training leading to the degree of M.D. does not necessarily fit a man for the position of health officer. The average practitioner learns little concerning vital statistics, sanitary engineering, water purification, sewage disposal, disinfection, forensic medicine, and the making and breaking of health laws. The public health officer looks on disease in the large, and is less interested in the individual case, which is the chief concern of the practising physician.—M. J. Rosenau in Vermont Med. Month.

The Menace of the Feeble-Minded.

The economic and social problems connected with the feeble-minded are of far greater importance than the average "man on the street" realizes. Whatever the cause, the fact is that this class is increasing enormously in all civilized countries. Some figures connected with one state are supplied in a report of the Committee of Visitors of the State Charities of New York. According to this report, there are in that State, at present, 32,000 feeble-minded persons. Of these, 4,900 are provided for in institutions especially designed for their care, and 4,500 in other institutions, leaving at large 22,600. It has been estimated that of the 32,000 feeble-minded, 10,000 are girls and women of child-bearing age, 1,750 of whom are cared for in institutions designed for the care of such persons, and 1,625 are confined in reformatories, prisons and almshouses, leaving about 7,000 at large in the community. Goddard estimates that, in the way of spreading disease and immorality and increasing the stock of feeble-minded, a girl or woman of this class, of child-bearing age, is three times as great a menace to the community as a feeble-minded boy or man. The Royal Commission of England reports that in that country the feeble-minded are increasing at twice the rate of the general population. The importance of providing, by the establishment of additional institutions and the completion of those under way, for the custodial care or control of a greater number of the feeble-minded cannot be overestimated. The statements of Amos W. Butler, of Indiana to the effect that feeble-mindedness produces more pauperism, degeneracy and crime than any other force, that it touches every form of charitable activity, that it is felt in every part of the State and affects in some way all the people, and that its cost is beyond comprehension, are again quoted as the best argument for the policies advocated.—Journal of the A.M.A.

MORAL NEAR-SIGHT.

Selfishness.

Diagnosis—

The weakness of the social affections and the strength of the private constitute selfishness.—MacIntosh.

Remedy—

Do naught to others which, if done to thee, would cause thee pain; this is the sum of duty.—Selected.

Phagocytosis.

Its stimulation in relation to Tuberculosis.

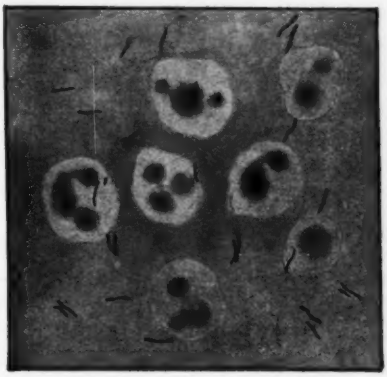
Convincing Evidence

TABLE OF RESULTS.

Duration of feeding with VIROL.	Average number of germs absorbed in 15 minutes by each Leucocyte.
0 weeks	1·1
2 "	1·3
6 "	1·5
9 "	3·8
12 "	4·5

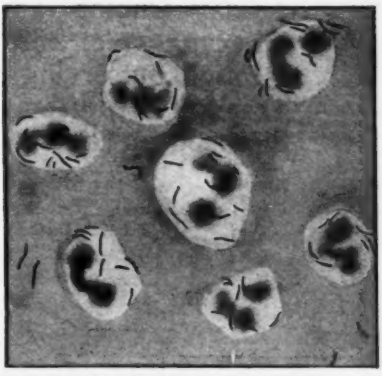
An elaborate series of investigations recently conducted at a well-known sanatorium has definitely proved that the addition of Virol to the diet exercises a remarkable influence on the phagocytic action of the leucocytes. The experiments showed there was a distinct and progressive increase in the functional activity of the white cells in proportion to the number of weeks the patient had been fed on Virol.

Proof from actual micro-photographs



BEFORE FEEDING ON VIROL.

From an actual Micro-photograph illustrating the deficient average Opsonic power of the Blood of a number of patients suffering from the debilitating effects of acute infections, before treatment with Virol. The average number of Bacilli ingested by each Polynuclear Leucocyte in fifteen minutes was 1·2, the Opsonic Index being 0·41.



AFTER FEEDING ON VIROL.

From an actual Micro-photograph illustrating the increased Opsonic power of the Blood of a patient after twelve weeks' treatment with Virol. The average number of Bacilli ingested by each Polynuclear Leucocyte in fifteen minutes was 4·5, the Opsonic Index being 1·3. Contrast this with the deficient average Opsonic power of the Blood of children of similar age not treated with Virol. (See opposite Micro-photograph.)

VIROL

Used in more than a thousand Hospitals and Sanatoria

S.H.S.

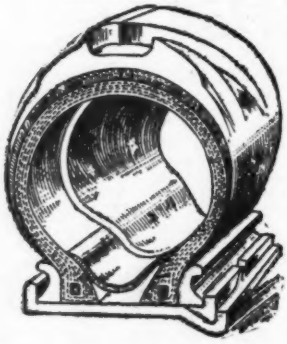
VIROL LIMITED AGENCY, 27, St. Peter's Street, Montreal.

DUNLOP TREAD
SEAL OF QUALITY
TRACTION

OUTSELLS BECAUSE OUTSERVES

To-day Dunlop Traction Tread outsells all other makes of anti-skids. That came about through outserving all other makes. Dunlop Traction Tread removed the fear of skidding, the need for chains.

Dunlop Traction Tread
Straight Side
Our Patented Tire



66 inches larger

Never did rim-cut

Most Envied Tire in all America

T-71

THE ORIGINAL CARPET SWEEPER AND VACUUM CLEANER

THE SWEEPER-VAC.

Simple in construction, durable, efficient, fully guaranteed, absolutely sanitary, endorsed and recommended by physicians.

The ***SWEEPER-VAC*** is the only vacuum cleaner in the WORLD that runs a real CARPET SWEEPER in combination with a vacuum cleaner with the possibility of using either separately or both combined.

REMOVES EVERY PARTICLE of dust, dirt, threads, lint and hair.

The name ***SWEEPER-VAC*** tells what the machine is: a combination carpet sweeper and vacuum cleaner.

The ***SWEEPER-VAC*** combination consists of two machines, each separate in itself.

The CARPET SWEEPER is small enough to run under the vacuum cleaner so that each can run along at the same time, each doing its own work thoroughly.

The VACUUM CLEANER, by its suction, will remove from a CUPFUL to a QUART of solid dirt from any large rug in two MINUTES, after it has been beaten or otherwise cleaned. The little CARPET SWEEPER at the same time, with its especially constructed brush will pick up all lint, threads and hair.

Although the carpet sweeper and vacuum cleaner can each be used independently, they will generally be used in combination.

We GUARANTEE that this remarkable ***SWEEPER-VAC*** combination will do more thorough work than many ELECTRIC MACHINES selling at TEN TIMES ITS PRICE.

MODEL "S" THREE IN ONE

Complete

$15.00

The Original Vacuum Carpet Sweeper

The ***SWEEPER-VAC*** differs from the ordinary vacuum cleaners.

BECAUSE it removes lint, threads and hairs, as well as extracts the dirt and dust.

BECAUSE it has no hose, no tubes, no nozzles.

BECAUSE it has no motor nor electricity, and is a boon to the sick room.

BECAUSE it makes no noise.

BECAUSE it is the ONLY THREE IN ONE CLEANER IN THE WORLD.

Read the following carefully.

A PHYSICIAN WRITES:—"We have been using the ***SWEEPER-VAC*** machine for some considerable time in our home and find it EXCEEDINGLY SATISFACTORY. It really takes up ALL THE DIRT AND DUST in a carpet and entirely without causing DUST IN THE AIR OF THE ROOM It is easily handled, and the mechanism is very simple and will not readily get out of repair."

A LADY PHYSICIAN WRITES:—"It gives me much pleasure to thoroughly endorse all that is claimed for the ***SWEEPER-VAC***, having had one in use for several months. It creates no DUST IN USING, and is SURPRISING TO A GOOD HOUSEKEEPER WHAT IT REMOVES."

A PROMINENT SOCIETY LADY WRITES:—"This is to say that I have a ***SWEEPER-VAC*** and am MORE THAN PLEASED WITH THE WORK IT DOES, finding it much superior to an ELECTRIC VACUUM CLEANER which I paid $200.00 for, and it is not nearly so cumbersome an article to move.

THE CARETAKER OF ONE OF THE LARGEST CHURCHES IN TORONTO WRITES:—"This is to certify that I had the trial of an ELECTRIC VACUUM CLEANER costing $150.00, and also a trial of one costing $45.00, after which I had a trial of the ***SWEEPER-VAC***, and I found that the SWEEPER-VAC did the BEST WORK."

OUR CLAIMS PROVE NOTHING—A TRIAL PROVES OUR CLAIMS

AN OPPORTUNITY to thoroughly try and test the ***SWEEPER-VAC*** will be given to ANYONE, ANYWHERE without its costing them one single cent.

IN ANSWERING mention the PUBLIC HEALTH JOURNAL and thus save EXPRESS CHARGES.

DEPT. P.

DOMINION SALES COMPANY

TORONTO ARCADE TORONTO

RELIABLE AGENTS WANTED IN SOME TERRITORIES NOT YET ASSIGNED

CUT THIS OUT and mail Dominion Sales Co., Toronto Arcade, Toronto

Please send me full descriptive circular, and copies of Testimonials; also information how I can secure a Sweeper-Vac on approval, without cost.

Name.....

Address.....

.....

Date.....

CANADIAN PACIFIC

WHEN YOU TRAVEL
Travel in Comfort

The Canadian Pacific offers to the travelling Public, service and equipment second to none. They build, own, and operate their Compartment Observation Cars, Standard Sleepers, Dining Cars, Coaches and Motive Power.

The Canadian Pacific own and operate a line of palatial hotels along the Railway from Atlantic to Pacific, thus affording their patrons every possible comfort.

The Canadian Pacific can ticket you around the World, and enable you to travel over two thirds of the World's journey, on their own trains and steamers.

Those contemplating a trip will receive full details and literature from any C.P.R. Agent, or write,

M. G. MURPHY
District Passenger Agent, **TORONTO**

25th

WITHROW TOUR

High Grade

Rate - $570

BEST OF

EUROPE

July 2, on new Allan Line S.S. **Calgarian,** 18,000 tons.
Return on magnificent White Star Steamer LAURENTIC, 14,982 tons.
Leave Liverpool, August 29.

Superior Features:

All First Cabin Staterooms.
All Grade A Hotels.
Drives—Livery Carriages or Motors.
Party select and small.

Extensive Route:

Shakespeare Country, London, Hague, Amsterdam, Marhen, Cologne, Rhine, Weisbaden, Berlin, Dresden, Nuremberg, Munich, Lucerne, Interlaken, Grindlewald, Brigue, Milan, Venice, Florence, Rome, Naples, Genoa, Monte Carlo, Nice, Marseilles, Arles, Avignon, Orange, Vienne, Lyons, Paris.

Unique Feature:—RHONE VALLEY.

APPLY FOR ALL DETAILS

ALLAN LINE, 95 King St. West, Toronto.

Steamship Reservations in Priority of Booking.

The Book Prescribe Medicines Intelligently

Propaganda for Reform in Proprietary Medicines

Explains how an injustice is done the physician and patient by prescribing unstable, inefficient and frequently fraudulent proprietary medicinal products.

READ this book and you will realize the danger which the physician encounters by prescribing proprietary products of unknown composition.

ANALYZE its contents and you will understand why the physician must be cautious so as not to be deceived by vague and mysterious statements regarding unknown proprietary remedies.

REVISED AND GREATLY ENLARGED
375 pages. 101 Illustrations. Cloth. Price, $1.00

American Medical Association
535 North Dearborn Street CHICAGO, ILL.

T. & N. O. Railway

Train Service

Through trains daily between Toronto and Englehart, operating cafe parlor and Pullman services.

Daily services between North Bay and Cochrane, operating C. P. R. sleeper, running direct to and from Montreal.

Local service for Charlton connecting with trains 1 and 2, also 46 and 47

At Iroquois Falls connecting with trains 1 and 2 for Porcupine.

For full particulars of running time or further information apply to any T. & N. O. Railway Agent.

A. J. PARR
Frt. and Pass. Agt.
North Bay.

PROVINCE OF ONTARIO

Department of Education

Offical Calendar

June:

1. Collectors in Unorganized Townships to report to Sheriff uncollected rates for previous year. (On or before 1st June).
   Assessor in Unorganized Townships to return assessment roll. (Not later than 1st June).
   Public and Separate School Boards to appoint representatives on the High School Entrance Boards of Examiners. (On or before 1st June).
   By-law to alter school boundaries or form Consolidated School Sections—last day of passing. (Not later than 1st June).
3. King's Birthday (Wednesday).
8. Senior High School Entrance and Senior Public School Graduation Diploma examinations, and the examination for Entrance into the Model Schools begin.
10. The Lower School examination for Entrance into the Normal Schools and into the Faculties of Education begins.
11. Normal School Final examination begins.
12. Upper School examination for Entrance into the Faculties of Education and Honour and Scholarship Matriculation examinations begin.
15. University Pass Matriculation examination begins.
    Junior Public School Graduation Diploma examination begins.
17. University Commencement.
    Junior High School Entrance examination begins.
19. Provincial Normal Schools close.
22. Inspectors' report on Legislative grant due. (Not later than 22nd June).
    Middle School examination for Entrance into the Normal Schools begins.
29. High, Continuation, Public and Separate Schools close. (End on 29th June).
30. Protestant Separate School Trustees to transmit to County Inspectors pupils' names and attendance during the last preceding six months. (On or before 30th June).
    Trustees' Financial Statements of Continuation Schools and Fifth Forms, to Inspector due. (Not later than June 30th).
    Report on inspectoral visit of City Inspector due. (Not later than June 30th).

THE BEST CURE

is often to get out on the land. **ONTARIO LANDS** *offer both prosperity and health to those who desire to take advantage of the opportunities afforded. In old Ontario there are fruit lands, vegetable lands and mixed farming lands available at reasonable prices which offer prospect of advancement in value within the next few years in addition to the value of the annual returns. They also include many of the conveniences of modern life, as well as the beauties of nature.*

In New Ontario there are lands available in some places for nothing and in others at a nominal price of fifty cents per acre, which are capable of producing almost all kinds of crops, and which constitute one of the best chances at the present time for the settler who desires to take up cheap lands.

Further information will be supplied on application to

HON. J. S. DUFF,
Minister of Agriculture,
Parliament Buildings,
TORONTO.

H. A. MACDONELL,
Director of Colonization,
Parliament Buildings,
TORONTO.

The following circular is Printed on a card and will be sent to those making application for same:

HOW TO DEAL WITH THE FLY NUISANCE

House flies are now recognized as MOST SERIOUS CARRIERS OF THE GERMS OF CERTAIN DISEASES such as typhoid fever, tuberculosis, infantile diarrhœa, etc.

They infect themselves in filth and decaying substances, and by carrying the germs on their legs and bodies they pollute food, especially milk, with the germs of these and other diseases and of decay.

NO FLY IS FREE FROM GERMS

THE BEST METHOD IS TO PREVENT THEIR BREEDING

House flies breed in decaying or decomposing vegetable and animal matter and excrement. THEY BREED CHIEFLY IN STABLE REFUSE. In cities this should be stored in dark fly-proof chambers or receptacles, and it should be REGULARLY REMOVED WITHIN SIX DAYS in the summer. Farm-yard manure should be regularly removed within the same time and either spread on the fields or stored at a distance of not less than quarter of a mile, the further the better, from a house or dwelling.

House flies breed in such decaying and fermenting matter as kitchen refuse and garbage. Garbage receptacles should be kept tightly covred.

ALL SUCH REFUSE SHOULD BE BURNT OR BURIED within a few days, BUT AT ONCE IF POSSIBLE. NO REFUSE SHOULD BE LEFT EXPOSED. If it cannot be disposed of at once it should be sprinkled with chloride of lime.

FLIES IN HOUSES.

Windows and doors should be properly screened, especially those of the dining-room and kitchen. Milk and other food should be screened in the summer by covering it with muslin; fruit should be covered also.

Where they are used, especially in public places as hotels, etc., spittoons should be kept clean as there is very great danger of flies carrying the germs of consumption from unclean spittoons.

Flies should not be allowed to have access to the sick room, especially in the case of infectious disease.

The faces of babies should be carefully screened with muslin.

FLIES MAY BE KILLED by means of a weak solution of formalin (40 per cent.) exposed in saucers in the rooms. This is made by adding a teaspoonful of formalin to a pint of water. The burning of pyrethrum in a room is also effective.

House flies indicate the presence of filth in the neighborhood or insanitary conditions.

ENTOMOLGICAL DIVISION, CENTRAL EXPERIMENTAL FARM, OTTAWA
DEPARTMENT OF AGRICULTURE, CANADA.

(Published by direction of the Minister of Agriculture.)

Protected by Canadian Patents.

SANITARY. DISINFECTANT.

NO DUST WHILE YOU SWEEP.

Why Breath Dust and Germs?

Packed in Bbls., ½ Bbls., ¼ Bbls. for Stores, Schools, and Public Bldgs. Household pkgs. at your grocer's.

Dustbane Mfg. Co., Ltd.
Ottawa - Ontario

THE ONLY FACTORY OF ITS KIND IN CANADA

MANUFACTURING

Trusses, Elastic Stockings, Suspensories, Shoulder Braces, Supporters, Chamois Vests, Crutches, Splints, Rubber Sundries

The Ottawa Truss & Surgical M'f'g Co., Limited,
OTTAWA, - CANADA

?

Are you particular as to the condition of the iron in your Blaud preparations?

Frosst's Perfected Blaud Capsules present True Ferrous Carbonate.

Each 10 grain Capsule contains, approximately, 1 grain of iron.

Charles E. Frosst & Co.
Montreal

A Doctor's Widow Writes—

R. H. Carney, Esq.,
District Manager,
Sault Ste. Marie, Ont.

Thessalon, Ont., Jan. 30th, 1914.

Dear Sir,—

Please accept my thanks for the very prompt and satisfactory settlement of my claim against your Company in connection with the accident policy on the life of my late husband. The original amount of the policy was for $1,000.00, which together with bonus additions makes a total of $1,250.00. Your Company is the first to settle, and I appreciate the satisfactory manner in which both yourself and your Company transact business.

Thanking you for your courtesy and kind attention, I remain,

Yours very truly,

(SGD.) JULIA MAUDE SPENCE.

Doctor Spence was accidentally poisoned on January 19th.

THE BROADEST ACCIDENT AND SICKNESS POLICIES
ARE SOLD BY

The General Accident Assurance Co. of Canada
The Canadian Casualty and Boiler Insurance Co.

Head Office : Continental Life Bldg., Toronto

JOHN J. DURANCE, Manager

UNIVERSITY OF TORONTO

FACULTY OF ARTS.

Instruction in the courses leading to the degree of B.A., M.A., and Ph.D. is given in the University, University College, Victoria College and Trinity College.

The Colleges provide instruction in the Classical, Modern and Semtic Languages and Literature, Ancient History and Ethics. The University gives training in the remaining subjects of the curriculum.

FACULTY OF MEDICINE.

Complete courses of instruction with ample opportunities for clinical training at the General Hospital, St. Michael's Hospital, Hospital for Sick Children, leading to M.D. and D.P.H.

FACULTY OF APPLIED SCIENCE.

Courses in Civil, Mining, Mechanical, Electrical and Chemical Engineering; Architecture and Applied Chemistry leading to the Degree of B.A.Sc.

FACULTY OF HOUSEHOLD SCIENCE.

Courses for normal and occasional students.

FACULTY OF EDUCATION.

Professional training for Public School, High School and Inspector's certificates.

FACULTY OF FORESTRY.

Courses leading to the diploma and the degree.

AFFILIATED INSTITUTIONS.

The affiliated Colleges and Schools train candidates for University standing in Dentistry, Pharmacy, Agriculture, Music, and Vetinary Science.

For information apply to the Registrar of the University, or to the Secretaries of the respective Faculties, Toronto, Ont.


Norwich Cathedral.

NORWICH UNION FIRE INSURANCE SOCIETY LIMITED

Norwich, England

INSURANCE AGAINST

FIRE, ACCIDENT & SICKNESS

EMPLOYERS LIABILITY

PLATE GLASS

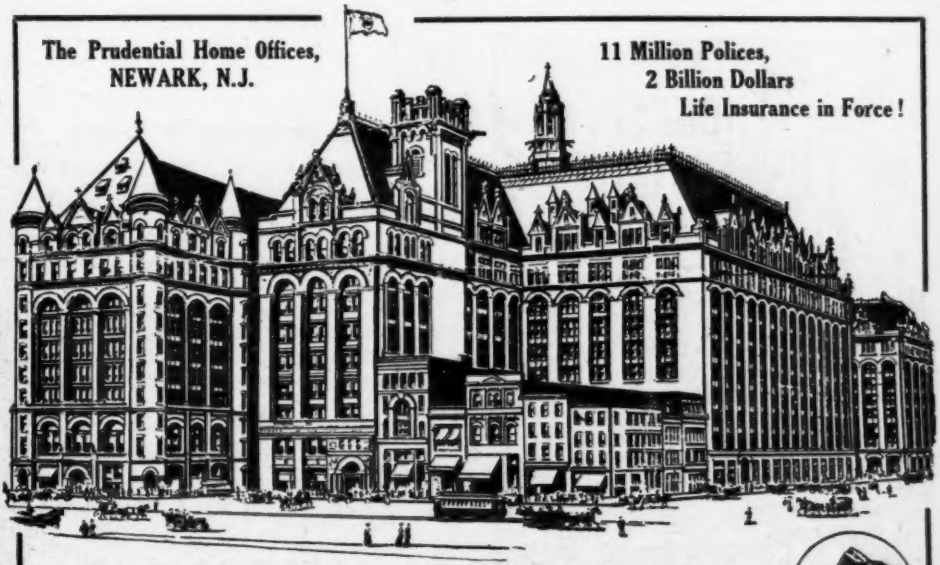
Agents wanted for the Accident Branch

Head Office for Canada
12-14 Wellington Street East

Norwich Union Building
TORONTO

The Prudential Home Offices,
NEWARK, N.J.

11 Million Polices,
2 Billion Dollars
Life Insurance in Force!

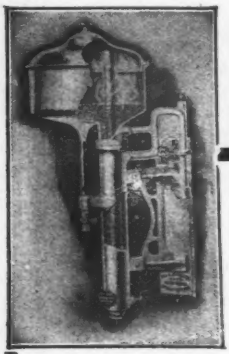


The Prudential Insurance Company of America

Founded by JOHN F. DRYDEN, Pioneer of Industrial Insurance in America

FORREST F. DRYDEN, President.
Incorporated as a Stock Company by the State of New Jersey.

Home Office, NEWARK, N.J.
Write for Particulars of Policies



Gas Operated Water Stills

DISTILL the water you drink with our WATER STILL. It is easily installed over the kitchen sink or any other convenient place. The purest of water can be obtained for less than 2 cents per gallon—75 per cent. cheaper than purchasing water elsewhere. Price on application.

Consumers' Gas Company of Toronto

12-14 Adelaide St. West

Telephone Main 1933-1188

Read "Gas News." You will find valuable information.

J. L. JONES ENGRAVING CO LIMITED

PHOTO & WOOD ENGRAVING & ELECTROTYPING, FOR ALL ADVERTISING PURPOSES

16 ADELAIDE STREET WEST

OPPOSITE THE GRAND OPERA HOUSE. TORONTO CANADA. TELEPHONE MAIN 3042

Illuminated Addresses from Designs

NOT THE LADIES, ANYWAY.

Cardinal O'Connell, of the Cathedral of the Holy Cross of Boston, recently delivered a sermon against some of the tendencies of the present day. Among other things he said:

> The play, the magazine, the ballroom, all give evidence of an ever-increasing disregard of even the rudiments of common decency of dress, deportment, of conversation and of conduct.

The Cardinal thinks the cause of this is due to a decay of Christian principles. Yet among the barbarians of the North who swept down on Rome, austerity was practised, and virtue was a commonplace It was only by contact with Oriental luxury that they became decadent.

The Cardinal does not state, however, who is responsible for the condition of things he defines. Certainly it cannot be the men, who are occupied with the job of making a living, with politics, and with baseball. Surely it cannot be the women, who, we are credibly informed, are now engaged in the grandest movement for the regeneration of humanity ever before known—a movement in which feminism shall at last go hand in hand with the millennium adown the corridors of Time.—Life.

NO FALSE MODESTY THERE.

Patient—Doctor, can't you diagnose my case? Can't you tell me what is the matter with me?

Doctor—Madame, I regret to inform you that I cannot. Nothing sort of an autopsy will reveal that.

Patient—Then go right ahead with it, doctor; this is no time for me to display false modesty.

HIS BEST.

"We miss President Wilson's quiet and trenchant wit sadly here at Princeton," said an instructor in Greek.

"I remember at one of President Wilson's receptions, I complained of a man who boasted of his bad habits.

"'When a man,' said the President, 'boasts of his bad habits, you may rest assured they're the best he has.'"—Philadelphia Bulletin.

THE ROYAL BANK
OF CANADA

Capital Authorized - -	$25,000,000
Capital Paid Up - -	$11,560,000
Reserve Funds - - -	$13,000,000
Total Assets - - -	$180,000,000

HEAD OFFICE: MONTREAL.

H. S. HOLT, President — E. L. PEASE, Vice-President & General Manager

315 Branches in CANADA and NEWFOUNDLAND; 30 Branches in the WEST INDIES

LONDON, ENGLAND, Princes St., E.C. NEW YORK, Cor. William and Cedar Sts.

SAVINGS DEPARTMENT AT ALL BRANCHES.

INVEST YOUR SAVINGS NOW

and Create a Reliable Asset.

THE LONDON and LANCASHIRE LIFE and GENERAL ASSURANCE ASSOCIATION, Limited

(CANADIAN BRANCH)

Head Office, MONTREAL. ALEX. BISSETT, Manager for Canada.

Policies World-Wide and Free from Restrictions.

ARE YOUR PRIVATE PAPERS SAFE?

THE BARLER NEW DOCUMENT FILE (opens like a book). A handy file in your office, your home, or in your safety deposit box at the bank. Steel covers with flanged edges, bound in seal grain keratol leather. Cord allows expansion to suit contents, and holds fast in any position without tying.

INDEX CARD WITH EACH FILE. A SAFE SIMPLE SYSTEM FOR PROTECTING DOCUMENTS. LASTS A LIFETIME.

No. 07. 4¾ x 10¾ in. 18 strong pockets, 4⅛ x 10⅛ in. with metal eyelets, $1.50

No. 9. 6¾ x 10¾ in. 20 strong pockets, 6⅛ x 10⅛ in. with metal eyelets, $1.75

The A. S. HUSWITT CO., 44 Adelaide St. W., TORONTO

SUN LIFE ASSURANCE COMPANY OF CANADA

YOUR HEALTH IS GOOD

to-day, perhaps, but that is no guarantee that it will be good *to-morrow.*

You may be able to get life assurance *to-day.* *To-morrow*—who knows?

Life Assurance creates *immediately*, for the benefit of your family in the event of your death, an estate that it would take long years to accomplish by other means.

Death Not Necessary

It is not necessary to die to "win" under an Insurance Policy. Last year this Company

PAID LIVING POLICYHOLDERS

$957,189.64

A Policy in the Manufacturers Life is efficient in life as well as in death.

SPECIAL TERMS TO TOTAL ABSTAINERS

Write for booklet "Total Abstainers vs. Moderate Drinkers". It will interest you.

THE MANUFACTURERS LIFE

Insurance Company

Head Office: King and Yonge Sts., Toronto

THE EUGENICAL CHILD.

The laws of heredity are but lamely understood at present, and, for that matter, will never enjoy so perfect an interpretation that anyone shall be in a position to say he is prophet as to the outcome of carefully laid plans. We undoubtedly want healthy children in this world, and this depends greatly on the parentage. But to have healthy children we need not go to the lengths of the eugenists who imagine that just because the man is free from syphilis, or, as they poetically express it, "from all hereditary taints," and the woman has rosy cheeks and broad hips and a vitality that is unquestionable, the child resulting from such a union must be a Hercules, with a mentality that has not a smithereen of abnormality to abase it. But, even granting that men and women dowered with strong muscles, strong nerves, healthy and optimistic views of life are the right sort of parents for eugenical children, will not the will-o'-the-wisp, heredity, play the world a trick none too seldom, and prove again and again its utter responsibility? Just as likely as not the eugenical child will surprise the circle of eugenists who are watching his development and turn out a Poe, a Baudelaire, or a Francis Thompson, the very mention of whose names sends a shiver down the spines of the eugenic gentry. The medical man of to-day who has made a study of the various facts of life, while not opposed to the eugenical movement in its milder phases, is not enthusiastic about the eugenical child, because he sees underlying fallacies and knows the things that are beyond human power.—Interstate Medical Journal.

BOUND TO BE SEEN.

Little Mr. Einstein, a traveling salesman, on Thansgiving Day, found himself far away from home, and naturally very lonesome. He knew not a soul in the hotel at which he was staying, and he decided that he must attract some attention at any cost.

Presently a bell-hop came through the lobby paging a Mr. Murphy. "Mr. Murphy! Mr. Murphy!" he shouted. At this point Mr. Einstein jumped up and hollered: "Say, boy, vat initials?"—Everybody's.

THREE REASONS IN THREE WORDS

HOME

When this word is mentioned a plea is set up for life insurance, because in the event of death a Mutual Life policy will keep the home intact.

WIFE

To manage the house and at the same time provide for the support of the household is an appalling task. A Mutual Life policy will protect the widowed wife from this bitter necessity.

CHILD

Health, freedom, a good education, and even a good character may depend upon the child being shielded from poverty by a Mutual Life policy.

The Mutual Life Assurance Company of Canada

Waterloo - Ontario

Protect YOUR FAMILY while it is Dependent upon You!

Protect YOURSELF against Dependence on your Family, in your OLD AGE!

HOW?

By securing a "SPECIAL FAMILY POLICY" in

THE NATIONAL LIFE

ASSURANCE COMPANY OF CANADA

For particulars, write direct to

Head Office - - - National Life Chambers, Toronto

ELIAS ROGERS, *President.*

ALBERT J. RALSTON, *Managing Director.* F. SPARLING, *Secretary.*

SEVERAL GOOD OPENINGS FOR PRODUCERS

THE
HOME BANK OF CANADA
ORIGINAL CHARTER 1854

NINE OFFICES IN TORONTO

8-10 KING ST. WEST, HEAD OFFICE & TORONTO BRANCH
78 CHURCH STREET
COR. QUEEN WEST and BATHURST
COR. QUEEN EAST AND ONTARIO
COR. BLOOR WEST and BATHURST
286 BROADVIEW, COR. WILTON AVE.
DUNDAS ST., COR. HIGH PARK AVE.
1151 YONGE ST. (2 doors North of Shaftesbury Ave.) on East Side
2115 YONGE ST., NORTH TORONTO, Cor. Eglinton Ave.

Branches and Connections throughout Canada

British and Foreign Correspondents in all the principal cities of the world.

Letters of Credit issued enabling Canadians travelling abroad to have ready access to funds in any foreign city.

BONDS

Our Bonds offer the small investor an opportunity to invest his money profitably and without risk.

We issue them in sums of One Hundred Dollars and upwards.

The Corporation was established in 1855, and the accumulated experience of considerably more than half a century is brought to bear upon the selection of the securities in which the Bondholders' and Shareholders' money are invested.

These Bonds are by law an

Authorized Trustee Investment

We shall be glad to send you a copy of our Annual Report and all particulars.

Paid-up Capital and Reserve Fund, - TEN MILLION DOLLARS

Canada Permanent Mortgage Corporation

TORONTO STREET - - TORONTO

ESTABLISHED 1855

Quite a Difference.

The big red touring car struck a pedestrian, rolling him in the mud and maltreating him in general. The owner ran back, greatly excited, after stopping his car.

"Is he dead?" he asked anxiously of the physician who was working over the victim.

"Oh, no!" replied the physician cheerfully. "He's not dead; he's merely run down."—Fun.

Crazy as a Fox.

At 2 a.m. of a dark night the door bell of a well-known sanatorium rang furiously. The sleepy porter awoke and shuffled drowsily to the door.

"Who's there?" he inquired.

"It's Mr. Jones; I've gone insane and I want treatment."

"What! At midnight? You must be crazy." And turning off the light, he crawled wearily back into bed.

Chronic Debility.

"You say your husband contributes nothing to your support?" said the lawyer.

"No, suh, nary a cent. That niggah jest natchally won't work. An' he's done got plenty of debility, too, if he only could use it."—Exchange.

More Sex Hygiene.

Elderly Gentleman—Well, son, are you having sex hygiene lectures in your school now?

Precocious Grandchild—Yes, grandpa; what do you wish to know?

Eugenics Gone Wild.

Admiring Visitor—What beautiful blue eyes your baby has!

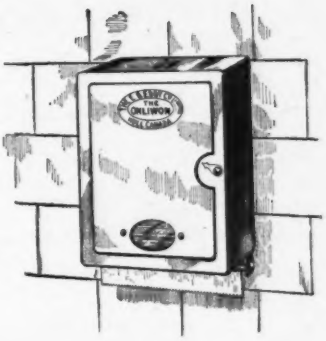
Fond Mother—Yes, indeed, and Tom wore a blue serge suit the day we were married.

"This is what I call adding insult to injury."

"What's the trouble?"

"An editor not only returns my manuscript, but he wants me to subscribe for his paper."—Birmingham Age-Herald.

—and you get this splendid cabinet FREE



Finished in beautiful nickel plate.

Cannot get out of order.

We want an "Onliwon" in all the better homes and public buildings throughout Canada.

Simply buy your regular supply of Toilet Paper from us, and one Cabinet —to introduce— will be given absolutely without cost.

To architects, builders, building superintendents, hospital superintendents and hotel proprietors—we are ready to supply any number of "Onliwon" Cabinets—F R E E—on the same basis as we offer to the ordinary householder.

Write now for prices of paper and full particulars

The E. B. Eddy Co., Limited

Established 1851

HULL - CANADA

Branches and Agencies in 25 Canadian Cities

"GOOD AS GOLD"

ARE THE

POLICIES

OF THE

London Life

Insurance Company

Head Office: LONDON, CANADA

Maturing 20-Year Endowment in the ordinary Branch show returns of $140 per $100 paid in premiums.

Full Insurance Protection in addition.

Ask for samples of Actual Results.

THE CENTRAL CANADA LOAN AND SAVINGS CO.

26 King St. East, Toronto.

Total Assets	$9,917,000.
Capital (sub.)	$2,500,000.
Capital (paid up)	$1,750,000.
Reserve Fund	$1,750,000.

Deposits received and debentures issued.

President
E. R. Wood

Vice-President
H. C. Cox

Vice-President
G. A. Morrow

THE CITY CHILD.

My small Suzanne, who has recently begun to study geography, came to dinner from her home work the other evening with a puzzled look. "Daddy," she said, "I don't exactly understand about the Rocky Mountains—what they divide, I mean. Will you explain it to me, please?" At the end of a rather detailed explanation she exclaimed joyfully: "Oh, now I understand. Thank you, daddy. You know I always supposed before that Fifth Avenue divided the East from the West."—Harper's Magazine.

RECOGNITION.

The bored youth turned to his dinner partner with a yawn.

"Who is that strange looking man over there who stares at me so much?" he drawled.

"Oh, that's Professor Jenkins," she replied, "the famous expert on insanity."—Tit-Bits.

To render a marriage happy, the husband should be deaf and the woman blind.—Proverb.

A NEW PRIVATE HOSPITAL

FOR THE TREATMENT AND CARE OF ALCOHOLISM

and those addicted to Drug Habits, has been established at 622 Spadina Avenue, Toronto.

Correspondence Invited.

J. BRYCE McMURRICH, M.D.C.M., Medical Supt. Phone College 186.

CONTINENTAL LIFE

Insurance Company

HEAD OFFICE - TORONTO

"BROAD AS THE CONTINENT, STRONG AS THE EMPIRE."

¶ In this age of strenuous competition and rush for business the only safety for the business man lies in a

GOOD LIFE INSURANCE POLICY

¶ The POLICIES of the CONTINENTAL LIFE are liberal and unrestricted, and carry the highest guaranteed Cash and Loan Values, Paid-up and Extended Assurance Options.

For Particulars write to the HEAD OFFICE or any of the Company's Agents.

GEORGE B. WOODS, President and Managing-Director.

CHARLES H. FULLER, Secretary and Actuary.

ACTUAL RESULTS

are the test. Endowment Policies in

THE DOMINION LIFE

are returning their holders interest far in excess of the Bank Rate. Insurance at virtually no cost is the ultimate result.

Head Office - - - - - - Waterloo, Ontario

ESTABLISHED 1875

Imperial Bank of Canada

D. R. WILKIE - - President, General Manager

Capital Authorized - - - -	$10,000,000.00
Capital Subscribed - - - - -	7,000,000.00
Capital Paid Up - - - - -	6,992,000.00
Reserve Fund - - - - -	7,000,000.00

SAVINGS DEPARTMENT

INTEREST ALLOWED ON DEPOSITS AT BEST CURRENT RATES

Hearts of Oak

IT takes decades to bring the oak from the acorn; but the oak breasts any gale that blows.

For nearly a third of a century the North American Life has driven its roots deep into the bed-rock of financial stability.

To-day its financial position is impregnable.

It is heart-of-oak.

Every North American Life Policy is backed by Thirteen and One Quarter Million Dollars of Assets and by three decades of upright business practice.

The North American Life is a *safe* Company in which to insure.

North American Life Assurance Company

"SOLID AS THE CONTINENT"

Head Office - Toronto, Canada

SIX FACTS *from the 67th ANNUAL REPORT of* THE CANADA LIFE ASSURANCE COMPANY

In important respects the Company in 1913 excelled its record for any previous year in its history.

1. THE SURPLUS EARNED in 1913 was $1,709,959.66, exceeding by over $179,000 the earnings of 1912, and by a much larger amount the earnings of any previous year. The present net surplus is $6,183,278.39.
2. THE INCOME of $8,094,885.70 was greater than that of the previous year by $698,125.96, and the greatest in the Company's history. The rate of interest earned, which had been steadily advancing since 1899, was further improved in 1913. This is an important factor in producing surplus.
3. THE ASSETS were increased by $3,860,271.32, and now stand at $52,-161,794.81.
4. THE TOTAL ASSURANCES now in force are for $153,121,363.94, an increase of over $8,273,000 in the year.
5. THE PAYMENTS TO POLICYHOLDERS in 1913 totalled $2,878.016,11, an increase of $415,051.31 over those of 1912. In addition to this, LOANS TO POLICYHOLDERS on security of their policy contracts were made for $1,692,-248.71.
6. THE MORTALITY of the year was again more favorable than the expectation, and this, with a continued LOW EXPENSE RATIO, contributed to the earning of a record surplus.

THE CANADIAN BANK OF COMMERCE

ESTABLISHED 1867.

Sir Edmund Walker, C.V.O., LL.D., D.C.L., President
Alexander Laird, General Manager. John Aird, Assistant General Manager

Paid-up Captial $15,000,000 - Rest $13,500,000

HEAD OFFICE, TORONTO.

London, England: 2 Lombard Street, E.C. New York: 16 Exchange Place.
Mexico City: Avenida San Francisco, No. 50. St. John's, Nfld.

In addition to the offices named above, the Bank has branches in every province of Canada and is therefore particularly well equipped for the handling of collections and the transaction of every description of banking business.

Drafts and Money Orders on all the principal countries of the world issued by every branch of the Bank.

Travellers' Cheques are a most convenient form in which to carry money when travelling. They can be used either at home or abroad and the exact amount payable in foreign money is printed on the face of each cheque. The cheques are issued in denominations of $10, $20, $50, $100 and $200, and are obtainable at any branch of the Bank.

Letters of Credit issued negotiable in all parts of the world.

The Metropolitan Life Insurance Co.

wrote more Ordinary insurance in the United States and Canada in 1913 than any other company. The amount was $230,563,693, which was all the law permitted it to write. In Canada the amount of Ordinary written was $18,275,895.

It furnishes Industrial life insurance to wage earners substantially at cost. It has in Canada almost 700,000 Industrial policies outstanding, which are held by workingmen.

In an attempt to lessen the death rate it has established a free nursing service, and in 1913 Metropolitan nurses made more than 1,127,000 visits to 175,757 sick Industrial policyholders, free of charge.

The Company has distributed millions of pamphlets giving valuable hints on the improvement of health conditions and the prevention of disease.

It has on deposit, with the Dominion Government and trustees, for the protection of Canadian policyholders, nearly sixteen-and-a-half million dollars of securities.

It paid in 1913, 167,017 policy claims, amounting to $27,801,848.12.

Assets - - -	**$447,829,229.16**
Capital and Surplus -	**35,584,901.65**
Liabilities - - -	**412,244,327.51**

(According to the report for 1913 filed with the New York State Department.)

Metropolitan Life Insurance Co.

1 Madison Avenue **New York City**

Coca-Cola

Has Aroused An Interest In The Study of Caffeine

WE BELIEVE HONESTLY, DOCTOR, that controversial discussion of Coca-Cola has done more to cause investigators to dig deep into the subject of caffeine than any other influence during the last decade.

We are glad—not only because it shows the widespread popularity of the beverage, but because the deeper and more scientific the investigation the more completely the wholesomeness of Coca-Cola is proven.

Investigation by the Unprejudiced Scientist Has Proven These Facts

- That Caffeine is a "True" stimulant.
- That Caffeine has no secondary or depressant effect.
- That Caffeine is not habit forming.
- That in its physiological value Caffeine is closely related to a *food.*
- That Coca-Cola is harmless—wholesome and beneficial.

1-M

Send for free booklet which goes more deeply into what we have stated above.

The Coca-Cola Co.

Atlanta, Ga.